



Capital District Transportation Committee

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2020 Continuing Operations Plan

*as approved by the CDTC Planning Committee, May 6, 2020
and by the CDTC Policy Board, June 4, 2020*

CDTC Operations Plan (Prospectus)

May 2020

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Section 1:

Planning Approach:

An Intention to Succeed

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Introduction

According to federal transportation law, every urbanized area with a population of 50,000 or greater must have a designated Metropolitan Planning Organization (MPO) that represents the state and local governments in the area. The Capital District Transportation Committee (CDTC) is the MPO for the Capital District. As such, the CDTC serves as a forum for making decisions about highway and transit improvements in the area. Some decisions have immediate impact; others have to do with plans for 10, 15 or 25 years in the future.

CDTC is the collaborative forum for transportation planning...

...that finds its success through the cooperation of all its members...

...by transforming the perspective on transportation planning to one that is holistic, equitable, sober, value-driven, and multi-modal.

Cornerstones of the MPO responsibilities are the development of unified planning work program (UPWP), a regional transportation plan (RTP), approval of federally-funded highway and transit projects through a "Transportation Improvement Program" (TIP), and determining conformity of its plans and programs with the State Implementation Plan for Air Quality.

Since passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, CDTC has enjoyed enhanced responsibility as a regional institution. Through the cooperation of all its members -- particularly of the New York State Department of Transportation and the Capital District Transportation Authority -- the CDTC forum has been used to resolve major transportation policy issues and set funding priorities in the Capital District to a degree not experienced by most other MPOs in the nation. The Transportation Equity Act for the 21st Century (TEA-21) enacted in 1998, the Safe and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) enacted in 2005, The Moving Ahead for Progress in the 21st Century Act (MAP-21) enacted in 2012, and the Fixing America's Surface Transportation Act (FAST Act) enacted in 2015 all reaffirmed this role.

CDTC attempts to go far beyond the role of a traditional MPO – that of a technically-competent staff supporting a forum serving as an honest broker of federal transportation funds. CDTC has established sufficient credibility in the regional community to serve as a strong catalyst for transforming the generally-held perspective on transportation to one that is holistic (viewing transportation within its context), equitable (dis- persing with jurisdictional or modal distinctions in iden- tifying wise actions), sober (confronting the conflict be- tween vision and budget constraints), value-driven (acknowledging that decisions are made based on public policy and community priorities, not just upon quantified traveler benefit), and multi-modal (treating all modes equally). In the Capital District, this arguably-healthier perspective has, in turn, enabled CDTC to pursue innovative practices and a broader agenda than most MPOs enjoy.

CDTC has taken efforts to enhance its credibility by extending the depth and breadth of its processes and pioneering with integrated land use – transportation planning efforts at the local level.

CDTC has also taken efforts to enhance the credibility of its decisions through major, successful efforts to engage "stakeholders" and other interested parties in the planning process. The New Visions effort was initiated in 1994

with the creative use of multiple task forces to address fundamental and potentially-controversial subjects. While that original effort received continued national attention for the depth and breadth of issues addressed in a technically-sound, participatory process, the New Visions process has continued for over 25 years, extending, expanding and refining CDTC's plans and policies.

The Community and Transportation Linkage Planning Program established in 2000 to help implement the New Visions plan has likewise received national attention. Its characteristics of integrated land use-transportation and local-regional planning, achievable recommendations and extensive coverage (86 study areas in 40 separate municipalities of the total of 77 municipalities in the 4-County region in 18 years) have no parallel in the nation.

CDTC's dynamic policy board membership now includes 19 elected officials and local government appointees working alongside representatives of six regional planning and transportation providers.

Unlike many MPOs, CDTC maintains a dynamic membership structure and a flexible agenda. In recent years, CDTC expanded its policy board to afford permanent status to any municipality with a population exceeding 50,000 (effectively providing membership to the region's second-largest municipality, the town of Colonie). Upon notification that the Saratoga Springs Urbanized Area exceeded the threshold for MPO requirements based on 2000 Census data, CDTC received confirmation that CDTC will fulfill that mission for the newly qualified urbanized area. That confirmation was relatively straightforward; CDTC has included the city of Saratoga Springs as a full voting member since 1965 and covered the entirety of the new urbanized area within the defined CDTC "metropolitan area boundary" for planning and programming since passage of ISTEA.

The dynamic structure has also allowed CDTC to extend participation at the Planning Committee table to nine towns in addition to the eight cities and four counties traditionally serving on the committee. Voting policy board membership now includes transit, thruway, port, airport and regional planning bodies in addition to the state department of transportation – an inclusiveness with few parallels.

"There are significant risks associated with metropolitan planning processes. The presence of cooperative transportation decision-making processes provides a unique institution in every metropolitan area for comprehensive assessments of system-level options. It also provides for public accountability. Failure to successfully engage in meaningful, informed decision-making on issues ranging from urban form to the availability of modal alternatives exposes a metropolitan area to risks of significant inefficiencies and inequities which can be expected to be compounded by future events, both those foreseen and unforeseen. MPOs must be leaders in the areas of form, funding and policy.

"... a shared, dynamic regional vision is a more effective instrument of public policy than a traditional transportation facilities plan. "Visionary leadership" is identified as one of the greatest contributions the MPO institution can provide to the metropolitan area. Visionary leadership allows short-term, local decisions to be consistent with long-term, strategic goals."

A finding and one recommendation from the national "Colloquy on the Coming Transformation of Travel" conducted by the New York State Metropolitan Planning Organization (NYSMPO) and the Federal Highway Administration (FHWA) in 2005.

As global events unfold in unanticipated ways, CDTC's responsive planning agenda is vital to maintaining relevance in the MPO process. Recent examples include CDTC's multiple joint efforts with the Capital District Transportation Authority (resulting in, among other things, the NY 5 land use and transportation plan, Bus Rapid Transit implementation, and our regional bikeshare); assuming a unique role as a partner with the US Department of Energy, staffing and supporting the Capital District's Clean Communities Coalition; integrating alternative futures into main-

stream regional planning; collaborating with the Center for Economic Growth, the Capital District Regional Planning Commission and the State University of New York at Albany on a comprehensive analysis of the fiscal impacts of alternative scenarios; establishing both a diesel hybrid electric program for CDTA and a diesel fleet retrofit program for other fleets; and working with the Rensselaer Polytechnic (RPI) on several national freight research projects and a local LED streetlight project in the Village of Colonie.

The adoption of CDTC's New Visions 2040 plan reaffirms the principled and aspirational foundation on which CDTC has found its success. It also raises the bar for the planning and implementation process by adding several additional principles and a raft of recommendations ranging from continuing its innovative approach to "big ticket" initiatives, promoting regional equity and complete streets, accepting some traffic congestion, right-sizing facilities, and preparing for a future with many new transportation technologies (automated and connected vehicles, electric vehicles, etc.) to implementing more ambitious public participation techniques and promoting safe bicycle and pedestrian facilities. The New Visions 2040 effort also demonstrated the benefits of exploring the full cost of alternative land use and growth scenarios.

New Visions 2040 provides a strong platform from which to clarify roles, relationships, structure and process at CDTC for the coming years. Additionally, New Visions 2040 provides the basis to clarify both planning commitments and potential new avenues of MPO activity for the future.

Maintaining Relevance

Introduction

Transportation planning in the United States is an unusual animal when viewed from the institutional context of general purpose government. General purpose local governments are designed for making home rule decisions regarding provision of services (sewer, water, police, fire, etc.), and are relied upon but less well-suited to implementing master plans that assure maintenance or development of a desired community character. State governments are generally successful in providing a legal framework for local decisions, in providing broad tax revenues to support public infrastructure and services, and in building and maintaining major highway systems, but again are rarely oriented to using these responsibilities to assure a healthy pattern of development of particular communities.

The combination of generally strong local home rule (in relation to zoning, development approvals, and similar actions) and heavy dependence upon the state to fund or provide for transportation systems puts transportation planning activities in a potential limbo -- independent actions by local government and state government can easily be at odds with each other. Transportation plans must therefore be developed in close cooperation with multiple communities and those who develop those communities on the one hand and also be responsive to larger state needs, objectives and limitations on the other.

Within this institutional context, cooperative urban transportation processes (through Metropolitan Planning Organizations -- MPOs) have been developed and refined (with varying degrees of success) in response primarily to federal law. In this situation -- with federal law providing the requirement for something that is primarily for state and local benefit -- the extent of success achieved by any particular urban transportation planning organization can be judged from not from its ability to meet the letter of the federal requirements (which it must do in order to remain in existence) but in its relevancy to both real and perceived issues of its participants. Success cannot be viewed in terms of meeting federal mandates for transportation plans and programs but in terms of whether state and local general purpose governments value the products of the urban transportation planning process and make decisions

The MPO concept faces many challenges

"First MPOs control project selection less than 3C procedures suggest and direct only limited federal funds. State DOTs and cities and counties and their transportation agencies largely control the federal, state, and local funds for regional projects, shaping project scope, location, and implementation.

Second, MPOs have little ability to promote transportation-efficient land use. This can be especially true when the COG and MPO are separate organizations.

A third challenge is that MPOs, unlike state and local governments, cannot impose taxes or fees to fund transportation; this hampers their ability to forge collaborative relationships and deliver region-serving investments. Fourth, organizational capacity varies widely among MPOs and is often weak. Producing and using relevant information and models and employing technically competent staff are central to MPO effectiveness."

Excerpt from the Journal of the American Planning Association, "Metropolitan Transportation Planning: Lessons From the Past, Institutions for the Future", Gian-Claudia Sciara, July 12, 2017.

outside the process that help advance the objectives of the process. In other words, a rubber-stamped endorsement of a state highway project by an MPO is a far less important measurement of the success of that MPO than the voluntary use of the MPO forum by the state highway agency to get state, local and private actors together to develop an equitable cost allocation for improvement of the same state highway, for example. A local government's participation in the MPO process merely to assure it gets its fair share of the federal highway pot is less important than that government's participation in crafting an objective project evaluation process for use in MPO project selection.

Prescription for a Successful Process

An MPO of any size, whether representing a single-city, single-county urbanized area of barely 50,000 residents or a major metropolis, will achieve the kind of voluntary participation in and reliance upon the MPO process by its participants if the MPO process is considered relevant by the participants. To achieve relevancy, the following short list of activities must be part of the continuing prospectus of any MPO or other transportation planning group. For several decades, CDTC has tried to follow this prescription.

1. Scan the planning environment.

Urban transportation planning does not occur in a vacuum. The planner must be constantly aware of current issues: What is the current budgetary climate at federal, state and local levels? Are residents and local governments hostile to development or do they seek economic growth with open arms? What are the local perceptions of congestion -- that it is non-existent, manageable, or totally unacceptable? How do local governments perceive the state -- as a pain or a panacea? How is transit service provided -- as a public service with an eye of operating deficits or as an integral part of the transportation system?

The planner must also be sensitive to the actors affecting transportation decisions. How are decisions made at the state highway agency and at the transit agency? At the city and county? In the key towns? Who are the important individuals and what are their strengths, weaknesses and biases? What are their "hot buttons", their taboos? What are the lines beyond which one had better not cross? What are their perceptions of planning and their openness to other opinions and expertise? Who are the principal developers in the community and how cooperative are they regarding transportation investment? Who are the primary traffic consultants in the area and what are their strengths and weaknesses? How can these significant actors be plugged into the cooperative planning process?

The planner must be knowledgeable about the range of existing processes that directly or indirectly affect the transportation planning environment. How are capital projects advanced through the state highway agency? How does the transit agency consider service requests or forecast financial conditions five years into the future? How are site impact reviews treated by local government or by the state -- are they required and, if so, under what conditions and who is charged with the review and approval? Are the expectations of local government that devel-

The federal law is not enough.

"For MPOs to have clout, they need clear authority. Yet participants express concern that the statutory federal authority given to MPOs also represents a problem, in that the federal requirements for long-range plans and Transportation Improvement Programs (and related air quality conformity exercises) "consume" the attention of many MPOs. For an MPO to be fully effective, its objective must go beyond merely fulfilling federal requirements."

A finding from the national "Colloquy on the Coming Transformation of Travel" conducted by the New York State Metropolitan Planning Organization (NYSMPO) and the Federal Highway Administration (FHWA) in 2005. See http://nysmpos.org/wordpress/?page_id=943

opers should pay for all transportation improvements or do they expect the state to fix problems when they get bad enough? Do local governments perform comprehensive planning? Are there meaningful local master plans or do municipal zoning ordinances serve as a default plan? How are environmental issues treated -- as considerations integral to a project or as impediments to be overcome? Who is involved in such environmental review and with what degree of clout? How can the transportation planning process best interact with these processes?

The planner must keep track of events. Who is proposing what kind of development where and how likely is it that transportation implications will be handled adequately? When will the decision be made and what are the opportunities for involvement? What funding initiatives are being prepared for the state legislature? Who is taking the lead and how will these initiatives be received? How is activity changing in the community or metropolitan area -- slowly, swiftly, or in reverse? What corporate activity are local or state officials seeking to attract to or retain in the community? How soon will Census data be available? What is the status of regional solid waste planning and who is involved for whom the experience will serve as an introduction to regional planning -- either good or bad?

2. Recognize Reality.

First, it must be consciously acknowledged that neither the lone transportation planner in a small county planning department nor the large MPO staff in a major metropolis is able to control all the decisions that affect the transportation system. The transportation planner or MPO staff is typically no more than the tail on the dog of the city, county or state highway agency. It is not realistic to expect that an MPO staff of four will be able to tell a state highway agency of 5,000 how to spend its budget or that it will be able to tell a local government that they cannot approve a shopping center proposal because of potential congestion five or ten years away.

Not all MPOs are well connected to the public pulse.

"In particular, 79 percent of survey respondents stated that they have difficulty obtaining the public participation needed to meet their [federal] transportation planning requirements. A few MPOs we interviewed stated that it was difficult to generate public participation in the planning process, in part because few people actually understand what an MPO is or what it does."

Excerpt from the congressionally-requested US Government Accountability Office report, "METROPOLITAN PLANNING ORGANIZATIONS: Options Exist to Enhance Transportation Planning Capacity and Increase Federal Oversight", USGAO, September 2009.

Second, the perceptions of residents and governmental participants in the transportation planning process must be acknowledged as real. The transportation planner cannot afford to alienate his or her constituency by demeaning the beliefs of the constituency. It is very easy to win an argument that, for example, a monorail on the expressway would not be an effective solution to congestion; however, if the argument is won by belittling or shouting down the idea, then the battle may have been won at the cost of the war. The war for voluntary solicitation of the transportation planner's or MPO's input requires that the views of each participant be respected.

Third, the transportation planner must keep a close watch on objective reality. While perceptions of participants should be respected, the involvement of the transportation planner will be sought out on a regular basis only if the planner can provide some "value added" to the discussion. (For example, "Yes, I agree that congestion on the expressway is worsening. But if you look at these numbers, I think you'll find that our conditions are better than those of other areas our size. We should collectively be doing our planning now, however, because our fore-

casts show peak hour level-of-service "F" within ten years. ")

3. Find the Opportunities in the Planning Process.

With a sensitive appreciation of the issues, actors, processes and events and a large dose of reality-checking, the urban transportation planner must seek opportunities to provide value to the decision-making process. The ultimate objective of hole-seeking is to stake a claim to a piece of the action that is largely unclaimed. Specifically, this activity requires an inventory of data and analytical procedures that exist in the urban area and an identification of important data elements and analytical procedures that are missing. It should be expected that the missing elements far outweigh those for which agencies have mastered. The planner must then choose certain holes to fill, given knowledge of the environment. (Will an initiative to collect local pavement condition data be well received, or would time be better spent developing a procedure to develop arterial standards be of greater value? What information is missing from the current decision-making equation?) While holding tightly to powers, few decision-makers would knowingly refuse credible information presented in a non-threatening manner. The value of planning is more readily accepted when viewed as enhanced knowledge than when it is perceived as a requirement, impractical philosophy or central government control. Plugging data and procedural holes clearly emphasizes the role of the planner as one interested in assisting the existing decision processes, rather than someone who simply wants to take over.

The opportunity seeking approach is clearly directed at providing a service valued by the constituency as opposed to forcing conformity to the planner's notion of how an activity should be carried out and who should do it. The MPO might arguably be the logical agency to maintain a regional traffic simulation model, but if an adequate one is maintained by the state highway agency, the MPO should seek an alternative activity through which to demonstrate credibility.

This approach consciously steers away from efforts that would be seen as duplicating or competing with activities of others. The planner chooses to accept (at least for the time being) somewhat weak data and weak procedures of other agencies and units of government in order to plug clear holes.

4. Stay ahead of needs.

The opportunity seeking approach also encourages initiative into new subject areas with the possibility of significant influence. To the extent that initiative is taken to address issues that have not been addressed by others, the opportunity exists to pre-empt or at least influence later efforts by others. For example, initiative taken by an MPO to provide procedures for comparing highway and transit projects (in the absence of state guidance) might provide a starting point for a later effort by the state to develop just such procedures. If done well enough, the local effort might just serve as a statewide standard.

The value of the planner or planning agency can be significantly enhanced by being prepared ahead of time for data, procedures or recommendations. The appropriate time to develop a prioritized list of highway capacity projects is before the state legislature passes the funding initiative to support a construction program, for example. The appropriate time to identify procedures for programming flexible federal highway/transit funds is before the federal legislation is passed. If the issue is raised before the need, the issue can be addressed in more legitimate fashion, establishing a balanced and objective approach to what otherwise might devolve into political wrangling.

5. Develop Technical and Political Credibility.

Establishing relevance of a planning process and entrée into important decision-making forums requires credibility. Pursuing activities that fill data and procedural holes is a vehicle for rapidly demonstrating technical competence and political savvy. Developing a track record of competence and good judgment through such activities prepares the way for influence in other, more sensitive areas. For example, one may establish credibility through analysis of traffic signal performance. The successful completion of such analysis, interpretation of their results and broad dissemination of reports may go a long way toward creating a generally-accepted reputation for sound technical judgment and presentation skills. That reputation may provide influence in other areas as additional opportunities arise. The planner or agency that successfully conducts traffic signal performance analysis may be easily accepted by all parties as the individual or agency to review traffic analysis for site impact studies; the planner or agency that successfully maintains data on congestion trends may be easily accepted as the individual or agency to identify system-level traffic issues surrounding a major development proposal.

6. Seek influence, not control.

This is essentially a statement of confidence mixed with humility. "We have information that should be considered and good ideas that should be heard, but certainly there are other views, as well." As the tail on the dog, the transportation planner or MPO staff should accept the lack of absolute power and aim for influencing decisions toward a more informed, objective, balanced, forward-looking orientation. There is much to be gained by a transportation planner or MPO that can provide a credible and impartial bridge between parochial attitudes of different agencies or communities in conflict. The decisions of those agencies or local governments will benefit from the information and perspectives of the planner or MPO, even if no authority is transferred to the planner or MPO.

7. Appreciate incremental movement in the right direction.

Planning and development practice in the United States does not foster the creation of anything close to an ideal transportation system or urban structure. Many views of what might be desirable and efficient as an urban form or what might represent a cost-effective transportation system are thwarted by such realities as market economics, resistance to taxes, and the inappropriateness (and illegality) of property taking without compensation. Thus, while it might be "correct" to ensure improvement of transportation infrastructure concurrently with development, it may not be possible to fully achieve such a goal. While it might be "correct" to price transportation at its full social cost, the electorate may not permit such an experiment.

The transportation planner or staff should encourage movement toward actions and policies that represent better balance, efficiency, equity, protection of resources and similar objectives but not be disappointed at limited success. In fact, partial successes should be applauded as stepping stones to greater successes in the future.

8. Maintain working relationships.

There are many instances in which the transportation planner might disagree significantly with the opinion or action of another participant in the planning process. Within the urban transportation planning process, it is vital to maintain willing and eager participation. A reluctant, secretive or suspicious state participant in an MPO process will contribute little to a cooperative spirit. A town supervisor who is hostile to the MPO because "all the money goes to the state, anyway" is not going to be helpful in resolving mutual issues. A planning board chairman who believes that a transportation planner is merely going to give him a hard time over a development's traffic impacts is unlikely to voluntarily seek that planner's advice on the project.

In order to make cooperative decisions at the MPO table, there must be willing participants at the table. This requires restraint on the part of the MPO and its staff, exercising discretion before taking a firm stand on an issue that might be divisive. In some cases, this may mean sacrificing an issue for the sake of the relationship. In others, it merely implies the use of tact in discussing differences, protecting a sense of mutual trust and respect while resolving the issue.

"MPO stature within the local community is directly related to effectiveness of working relationships between the MPO staff and MPO participants. Given that the MPO staff size is comparable to the "tail" on the larger "dog" of state and local governments and transportation authorities, strong working relationships between the MPO and its partners are inherent in successful planning processes. Only when the partners share ownership of the MPO process and seek value added through the process can the MPO expect to be seen as a vital decision-making forum distinct from the individual member agencies and able to go beyond the institutional constraints of those agencies. When successful, MPOs enjoy broad local support. "

A finding from the national "Colloquy on the Coming Transformation of Travel" conducted by the New York State Metropolitan Planning Organization (NYSMPO) and the Federal Highway Administration (FHWA) in 2005. See http://www.nysmpo.org/colloquy_travel.html

The elements listed above are significant but are not sufficient by themselves to produce success. Capable staffs are required to carry out these elements and all the technical and policy work associated with them. Assumed in all of the above is that each element is done well -- the environmental scan, the pursuit of activities to identify planning opportunities, the effort to develop and maintain relationships. The outline simply provides a proven method to establish the value of transportation planning, develop credibility and foster willing participation of key actors.

Further, each item in the outline represents a continuing effort. The planning environment is constantly changing; new personalities assume new responsibilities, new laws amend existing processes, new issues provide new challenges to communities. At the same time, success in one technical activity opens the door to work in another area, offering the unavoidable choice of demonstrating competence once again or allowing one's reputation to tarnish and influence diminish. Success in these activities, however, will secure a recognition of relevancy and value for the planning process.

3

A Healthy Organizational Culture

The importance of organizational culture

The need for a carefully-nurtured, constructive organizational culture is evident in even a cursory examination of both successful and unsuccessful organizations – public or private, small or large. Those which both foster and achieve buy-in and initiative from participants (Southwest Airlines, for example) consistently out-perform those that operate from a traditional, hierarchical top-down, span-of-control, employer-employee mindset. Is Southwest's success attributed to its lack of assigned seats or to its corporate culture of "we're all in this together and we're going to make it work"?

Close observers of the auto industry have clearly predicted the hard times currently being experienced by firms such as GM and Chrysler, but not Honda or Toyota – solely on the basis of corporate culture, not product quality or price.

The need for such a culture in public governance is made more critical by the sheer breadth and depth of public policy issues confronting the state's chief executive in the 21st century. Each and every subject area facing the state today is confronted with a longer list of specific policy issues than ever before, nearly all shaded with conflicting objectives, fewer resources and greater expectations from a wider range of stakeholders than in the past. The only way to engage with and make progress on this enormous set of complex subjects is to engage the entire apparatus of government in articulating the vision and to empower a wider array of players with the authority and responsibility to create, explore and persevere on multiple fronts simultaneously.

The "PACHO" language to describe successful organizational culture

There are many ways of framing successful management or organizational styles. The following represents one particular set of terms. The terminology describes the elements of a dynamic, productive and entrepreneurial organization (or for that matter, of a dynamic, productive and entrepreneurial individual, family, business, organization or public agency (or entire executive branch of government)). The acronym for this approach is PACHO, based on the characteristics of the organizational culture: Principled, Aspirational, Celebratory, Holistic and Organic.

Whether or not any of the five terms in the PACHO acronym are incorporated into the corporate language of successful organizations, these organizations invariably display these characteristics. Language is important, but clearly secondary to the attitudes described by the language. A successful organization may not use the term "principled", "aspirational", "celebratory", "holistic" or "organic", but without exception it is principled, aspirational, celebratory, holistic and organic. Recognizing and embracing these characteristics as the norm can be argued to be the recipe for success of any entity.

Principled The culture of an organization is defined by its underlying set of beliefs and intentions, whether formally stated or not. In a staff setting, this set will be conveyed to new staff and customers or clients by the statements and actions of existing staff. Similarly, in the boardroom, new board members inevitably fit into and adopt the set of goals, beliefs and intentions of the existing board.

The following narrative was first articulated nearly twenty-five years ago in CDTC's Prospectus document. A careful observer will recognize that CDTC's organizational culture has allowed for diligence and faithfulness to this approach.

Two words summarize well the approach that CDTC has attempted to bring to transportation issues in the Capital District: "stewardship", and "vision". These characteristics of CDTC's successful cooperative planning process are equally essential to meeting the challenges of the coming years.

STEWARDSHIP refers to the responsibility of CDTC (collectively) and its members (individually) to care for that which has been entrusted to them. Transportation planning in coming years should insist upon proper stewardship of the following:

1. Existing transportation facilities and services.
2. Public resources.
3. Personal resources
4. The human, natural, and built environment.

VISION refers to the responsibility of CDTC to look to the long-range future of the area and make sure that the transportation system works then as well as now. If the planning process neglects the need to consider the future then it is no more than a "caretaker" process, merely preserving what already exists.

Transportation planning must insist upon a clear, creative vision of the following:

1. Goals of the Capital District's residents, businesses, and communities.
2. Possible problems to be averted.
3. Innovative ways to achieve the goals and avert the problems. CDTC and its members must devote conscious effort toward finding opportunities to achieve the quality of life desired. Many of these may be new to the transportation planning process in the Capital District, but may be necessary if the transportation system is to work well in the future.

Stewardship and vision are important "catchwords" that will continue to describe CDTC's approach to the critical issues in coming years

formally stated or not. In a staff setting, this set will be conveyed to new staff and customers or clients by the statements and actions of existing staff. Similarly, in the boardroom, new board members inevitably fit into and adopt the set of goals, beliefs and intentions of the existing board.

It is helpful to formally articulate the principles that define the organization. First, this makes it clear to all parties just "what is what". For example, stating that, "We strive to satisfy every customer, regardless of profit" sets the tone for a retail establishment and gives a new sales representative a quick understanding of the intentions of the firm. Second, formal principles keep an organization or firm well-grounded. Having stated, well-known principles helps avoid choices or actions that are at odds with the principles.

Of course, as is true with parents and children, stated principles are only useful if the actions of the organization or firm's leaders reflect the principles. It must be "do as I say and do" if stated principles are to be effective. The consistency between intentions and actions is what makes an organizational culture "principled" rather than simply one with stated principles.¹

Consistency is also a product of a principled approach. A principled organization is likely to have its actions at one time build a foundation for actions at a later time; an organization that operates largely in an ad hoc, crisis mode is not.

Aspirational Aspirations are to an organization's enthusiasm and energy what principles are to its behavior. As with the principles, these can be implicitly conveyed or explicitly stated. Again, it is helpful to state these aspirations. Aspirations pertain both to the organization or firm ("to learn from our peers and try to adopt the best practices", "to become one of the top five in our field" or "to have 95% or better on time performance") and to the results of the organization's or firm's activity ("to reduce the number of children without access to health care by 50% over ten years" or "to make internet access affordable to all"). Con-

¹ In the case of the Capital District Transportation Committee, a total of 31 planning and investment principles (now 15) have been articulated and formally adopted by the board over a period of nearly 15 years. The formality of adoption has served many times to help avoid taking actions that would have been expedient but mostly likely would have resulted in damage to the credibility of the organization.

veying both types of aspiration to staff, board members, clients/customers and the general public empowers everyone to seek the highest and best and gives permission for exploration and creativity. An atmosphere infused with a high level of desire for the best results can be considered “aspirational”.²

Celebratory It is probably safe to say those that experience the most on-the-job frustration are not necessarily those who have the most difficult jobs. Rather, it is probably experienced by those who feel unappreciated, those who believe they are treated unfairly at work or those who have little respect for the organization or superiors for whom they work.

In addition to addressing this potential problem through clear principles (guiding behavior) and aspirations (providing enthusiasm), it is necessary to celebrate successes and accomplishments. While it may seem counterproductive, intentional celebrating may be particularly necessary in an organization or firm that is principled and aspirational. In such an organization or firm, satisfaction is not found in getting to go home early for a weekend, but in “making a difference” or “doing the right thing”. With high standards comes a daily reminder of falling short of lofty goals. Board members and staff in these settings need constant reminders of their many successes and accomplishments. When successes are cited and praised, it is inevitable that board or staff will recognize that these successes are remarkable (relative to the accomplishment of peer organizations or firms) and meaningful (in terms of actual benefit). Celebrating provides a sense of value and meaning to board or staff that reinforces a

The holistic approach is demonstrated in CDTC’s short list of core performance goals derived from an inclusive, comprehensive planning process. These are:

- ◆ Maintain or improve overall service quality from current conditions.
- ◆ Enhance the quality of life in the region.
- ◆ Reduce the per-capita resource requirements related to provision, operation, use and mitigation of the impacts of the transportation system from current per capita costs.
- ◆ Reduce the per capita cost of crashes.
- ◆ Build strong urban, suburban and rural communities.
- ◆ Knit them together into a cohesive metropolitan area.
- ◆ Support economic and social interactions that accommodate population, household, employment and commercial and industrial growth while improving environmental quality and enhancing the natural and built environment.

commitment to the principles, re-energizes aspirations, helps retain the best staff and prepares the organization or firm to respond quickly and successfully to new challenges.

As used in this context, “celebrating” does not mean artificial celebrations such as honoring an employee of the month (and by so doing, devaluing the contributions made by all other employees) but rather citing, publicizing, praising the accomplishments of both the organization and the crediting those who made it happen. If the celebration is focused on both the organization (what we have done) and the individual (what he or she did to make it happen), then all the staff or board can share in the praise and positive feeling. Celebrating success borders on boasting, but is fully justified. Without this self-praise, staff or board members begin to take all their successes for granted and focus instead on areas in which the organization or firm falls short.

Holistic Successful organizations move beyond the narrow confines of their particular subject matter and embrace a culture that fits that subject matter into the broader context. This is not to be confused with trying to do everything for everybody. Excessive diversification is likely to damage the core business and

² In CDTC’s case, the staff has encouraged policy makers to embrace the highest aspirations of federal law that underpin transportation planning – seeking to fulfill the spirit as well as the letter of the law. The organization’s culture supports individual initiative and creative approaches to move the organization’s practices closer to the ideal.

dilution of resources to cover too wide a spectrum of services most likely means doing a poor job of things across the board.

Rather, a holistic approach recognizes that the organization's or firm's activities are meaningful and beneficial only if they are integrated with related subjects. Educational services, for example, must be viewed in the context of social settings, physical health and home life, for instance. Land use planning must be conducted with full integration of traffic and transit issues. Banks must make their lending decisions in the context of their community's or region's economic and social needs. All organizations and firms must understand the local context in which they operate and participate in it.³

A holistic approach also contributes to adaptability and creativity, as staff members remain acutely aware of opportunities to better use the firm's products or services to improve the quality of life of customers and clients or to improve the overall condition of the community.

Organic An organic entity is one that can be easily viewed from the outside as adapting and growing in a living – rather than mechanical – method. While traditional business models may steer firms toward strict organization charts and hierarchies, these are mechanical devices with a very limiting effect on the organization's success.

An organic culture is one in which every member's function is well understood at any time, but which could change easily depending on need. It is one that is more likely to employ task-specific work teams than rigid chains-of-command. It is one that is quite open to the emergence of leadership and the assumption of responsibility by the most unlikely staff members.

Like a plant in a field, an organic organizational culture allows an organization or firm to respond to light and food, growing in the direction in which it receives the greatest response. Instead of mechanically stating an objective such as, "within five years we will add five branch dealerships and represent all major car manufacturers", an organic culture would leave the door open to growing, adapting, contracting or modifying as call for by need, opportunity and demonstrated competence.

An organization that successfully becomes principled, aspirational, celebratory, holistic, and organic is the most likely organization to establish the confidence and external credibility to succeed in responding to new opportunities that present themselves.

³ CDTC recognizes that its transportation investment decisions require the context of community planning and private sector investment. As a result, it has funded over 89 integrated community-transportation studies jointly with municipalities. It also has completed an economic analysis of the excess educational, sewer, water and transportation cost of suburban sprawl jointly with the State University and the private Center for Economic Growth. As a result, CDTC's activity is fully integrated into the fabric of the region.

Seeing Transportation in its Context

A holistic approach requires that transportation facilities and services be considered in a broader context. This is a tall order. Transportation professionals are not dealing with a subject (transportation) that has only marginal impacts on other aspects of life. Rather, transportation professionals work with a subject that has substantial influence over much of the social, environmental, economic and political agenda of modern life.

Transportation's context can be framed in various ways. One framework is outlined below, focusing on five aspects of the context: community structure and regional form; environmental sustainability; quality of life and personal expression; public health; and economic productivity and competitiveness.

Community Structure and Regional Form

The dominant transportation mode is recognized as a primary (if not the primary) factor in determining the shape of communities. The oldest civilizations formed villages, towns and cities according to a pedestrian scale. Horse-drawn carts and carriages expanded spatial dimensions somewhat over the centuries, but it took the streetcar in the late 19th and early 20th centuries to provide substantial suburban development. The current physical form of metropolitan America is acknowledged to derive from the attributes and availability of the automobile and truck.

Numerous critiques of current urban form cite loss of a sense of place and community identity, proliferation of isolated development, racial separation and other ills and associate community and regional form with transportation patterns – and the transportation investments made to accommodate them.

"Of the 1400 communities I have walked, I have not found one where designing for the car has made it a successful place. Indeed, the most successful villages, towns and cities in America are those designed before the car was invented, and where the least tinkering has been done since." 4 (Dan Burden, Walkable Communities, Inc.)

The form, modal orientation, and operational details of the transportation have an inarguably profound effect on community structure and regional form.

Environmental Sustainability

Concerns for global climate change and dependence upon finite, non-renewable energy sources are also highly correlated with transportation form and travel behavior.

As of 2019 carbon dioxide concentrations have increased 45% over their levels in the year 1750. These levels are now higher than they have been in the last 800,000 years (US NOAA). In the US, transportation

⁴ Dan Burden as quoted in Project for Public Spaces web site, www.pps.org.

*and the use of petroleum-based fuels are responsible for approximately 34% of these emissions as of 2017 (US EPA); these data continue to worsen, making these trends non-sustainable.*⁵

While estimates of the remaining stock of petroleum from conventional and non-conventional sources vary, motorized transportation's near-exclusive dependence upon non-renewable energy sources also means that current forms of transportation are non-sustainable.

The form, modal orientation, and operational details of the transportation system have an inarguably profound effect on global environmental sustainability.

Quality of Life and Personal Expression

Transportation facilities and services have a substantial influence on personal quality of life and expression. Researchers have found that personal travel time budgets remain relatively constant at roughly 1.1 hours per day, regardless of income or community structure.⁶ This implies that transportation modal attributes – notably speed and cost – provide primarily for substitution effects. That is, faster or cheaper travel provided by motor vehicles and highways permits households throughout the world to gain other quality of life benefits (such as access to a better job, a bigger house or larger lot, better schools or lower taxes) while maintaining a relatively constant time budget.

On the other hand, noise, congestion, air quality and other negative attributes of an auto- and truck-dominated transportation system offset some or much of the quality of life benefits that these modes provide. Residential quality, for example, is said to suffer from the presence of as little as 1,000 vehicles per day on a residential street.

On average transportation also consumes 17.4% of household budgets in the US, or about \$9,737 annually per household – predominantly for the purchase and operation of household cars and light trucks.⁷ Combined with the fact that the primary “face” that individuals show in public is that of their vehicles, our consumerist culture translates the high level of financial commitment for vehicles into a primary outlet for personal expression and discretionary spending. Our form of mobility also has an effect on other lifestyle choices – the nature and location of recreational activities; the range and location of social, spiritual and civic responsibilities; the ease of job changes, household relocation, and more.

The form, modal orientation, and operational details of the transportation system thus have an inarguably profound quality of life and personal expression.

Public Health

Put simply, daily transportation is among the most dangerous activities in which individuals engage. Worldwide, motorized transport is estimated to be responsible for 1.35 million deaths, which is steadily increasing, and 20 – 50 million injuries per year.⁸ In the United States, crashes represent over 23.6% of all deaths from “unintentional injuries”, constituting the leading cause death of Americans under 35 years of age.⁸⁹

⁵ National Oceanic and Atmospheric Administration, *Climate Change: Atmospheric Carbon Dioxide*, August 2018.

⁶ Schafer, Andreas, and David Victor. “The Past and Future of Global Mobility”, *Scientific American*. October 1997.

⁷ U.S. Department of Transportation Bureau of Transportation Statistics, *Transportation Economic Trends*, 2017.

⁸ World Health Organization, *Global Status Report on Road Safety*, 2018

⁹ US Centers for Disease Control. *National Vital Statistics Report, Vol. 68, No. 9*, June 24, 2019.

Some nations have adopted aggressive objectives and have reduced serious injuries and fatalities sharply. While in 2018 many States in the U.S. are forecasting more, not fewer, fatalities in coming years. Significant safety-related improvements in transportation planning, facility design, and more significantly, in law enforcement and traffic operations will be needed to actually decrease the number of traffic related fatalities.

The nation's sedentary lifestyle, abetted by the decline in community-level activities and related walking, is also associated with severe public health risks. While the cause and effect of health problems from obesity are not as clearly tied to transportation and urban form as is transportation's relationship to injuries and fatalities, even a probable contributing relationship is significant. 39.8% of all adults (93 million people) are classified as obese; and the health, social and economic costs of obesity in the US are enormous and still mounting. Obesity adds \$147 billion/year to the cost of healthcare in the US. These numbers have been increasing since 2003.¹⁰

The form, modal orientation, and operational details of the transportation system thus have an inarguably profound impact on public health.

Economic Productivity and Competitiveness

An inextricable relationship between transportation and economic activity is undeniable. Competitive transportation access is a necessary factor for economic growth. Firms use improvements in speed or cost to create a cost advantage in the manufacture and provision of goods and services, and in a market society a cost advantage produces growth.

Freight movement is a considerable aspect of the overall transportation system, with large trucks constituting over 30% of traffic volumes on greater than 20% of all Interstate facilities, for example, and truck traffic forecast to double over the next 20 years.¹¹ The scale of freight transportation is also immense, with the cost of for-hire and in-house transportation services in the US exceeding \$450 B per year.

The relationship of transportation and economic activity in the early part of the 21st century is as critical an issue as ever, but cause and effect are less clearly understood in relation to transportation facility and service improvements (or degradations) being made today. This is partly due to a shift to an information-based economy less dependent on physical access to the supply of raw materials or to consumer markets. It is also due to the contrast between the order-of-magnitude transportation efficiency gains achieved in the era of railroad expansion or the period of Interstate highway construction and the more modest gains achieved today.

What is known is that reliability is an increasingly critical component of the overall cost equation due to a shift in manufacturing to just-in-time delivery and the high level of competition among package delivery services in the area of guaranteed delivery times.

The form, modal orientation, and operational details of the transportation system have an inarguably profound impact on economic productivity and competitiveness.

Public Attitudes Regarding a Holistic Approach

Available public opinion survey results point to a picture that is not consistent with a narrowly-defined transportation planning process focusing primarily on capital projects and accommodation of fixed estimates of long-range future travel demand. Americans tend to value freedom, options, and access to information, and adjust behavior continuously. Traditional capital planning processes are less likely to produce candidate actions that fit those values than more integrated approaches that balance transportation service with community enhancement, operational improvements with physical changes, provision of modal alternatives with improving highway levels-of-service.

Consider just a few indicators of public attitudes:

In the 2001 National Household Travel Survey (NHTS), about as many people consider not knowing about traffic tie-ups or road construction “very much of a problem” or a “severe problem” as those whose consider highway congestion very much of a problem or a severe problem. These numbers are similar to those who consider rough pavement or potholes very much of a problem or a severe problem.¹² This suggests that the public assigns comparable importance to maintenance-, operational- and capital-oriented issues.

A November 2004 statewide survey by the Public Policy Institute of California (PPIC) indicates that, while 59% of Californians find traffic congestion on freeways and major roads a big problem, 77% are somewhat or very satisfied with their commute to work. 89% are somewhat or very satisfied with their neighborhood, and 70% say that, all things being equal, they would choose to live in a single-family detached home “even if it means you need to drive a car to commute and travel locally.” This suggests that, even when confronting regional problems they believe are large, the great majority of the public are satisfied with the choices and trade-offs they make – a reasonable balance is sufficient for satisfaction, not full achievement of mutually-exclusive objectives.

An October 2004 survey in the Albany NY metropolitan area conducted by the Siena Research Institute of Siena College found that 71% of residents are satisfied with the quality of life offered by the community in which they live; only 39% experienced traffic congestion lasting more than 15 minutes over the previous two weeks; while 41% do not feel that speed limits are adequately enforced in their area. The same survey indicated that 68% disagreed that it is up to private developers, not citizens or government, to determine the type of developments and growth that takes place. This suggests that the public fully expects its governmental agencies to effectively carry out land use planning and control, traffic speed management, and improve the availability of modal options. Similar to Californians, these Upstate New York residents are satisfied with their own choices and tradeoffs.

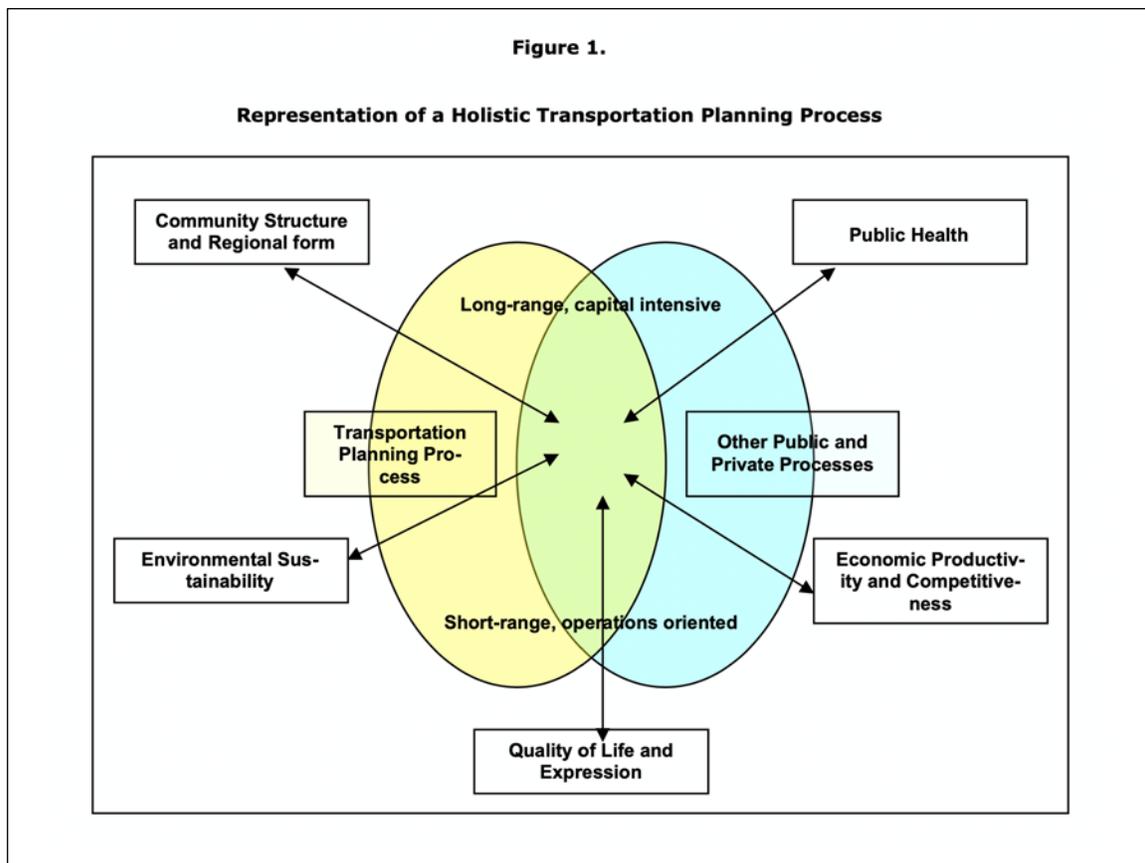
The gist of this information is the Americans live, work and play in an integrated environment. They express concerns over broad societal conditions (such as congestion or housing prices), but make personal choices that accommodate for costs, the presence or lack of options, qualitative benefits and other factors to achieve what they view to be a satisfactory life.

Clearly, this public attitude is not consistent with an insular transportation planning process focused primarily on levels-of-service or on alternatives analyses aimed at accommodating a fixed estimate of future travel activity. The demands on the transportation system of our society and economy are dynamic, complex and integrated; a holistic and integrated transportation planning process is the only logical match to such demands.

Describing a Holistic Approach

To help describe a practical approach to an integrated and holistic transportation planning process, Figure 1 lays out the five dimensions of the transportation planning context. The integrated nature of the process is represented by the intersecting circles: one oval for the formal transportation planning process and another representing other public and private planning, development and service processes. The overlapping area represents subjects and decisions made in the transportation planning process with a full consideration of activities underway beyond the transportation planning table; and subjects considered and decisions made in other processes that are fully knowledgeable and integrated with transportation planning activities.

An example of a subject in the overlap area would be adoption by multiple municipalities of a regional development compact. The initial discussion of the value of such a compact could occur at the Metropolitan Planning Organization table, at a private sector economic growth organization, or at an environmental advocacy group. In a holistic planning process, the discussion would be informed by the perspectives of multiple parties, each contributing to the evaluation of the concept's merit, refining its details and citing potential implementation paths and barriers. Such a process provides the best chance for plans and services to reflect broadly-held community values. The collective ownership of the products of these discussions provides for a high likelihood of successful implementation.



The limitations of attempting to reduce the various complex relationships into a simple diagram such as Figure 1 are obvious. In a truly integrative environment, all five facets of the context are overlapping and inter-related. The figure does highlight the compelling logic of an integrated approach; for instance, what exactly would be the appropriate content of the area exclusive to the transportation planning process? What operational or capital deci-

sions would be made in the transportation planning process that are not concerns to others – businesses, residents, law enforcement agencies, environmental advocates? Perhaps a more accurate presentation of a holistic or integrated transportation planning process is one in which the vast majority of the area is in the overlap area, and little activity is found outside the overlap.

Characteristics of a Holistic Transportation Planning Process

A holistic or integrated transportation planning process embraces the knowledge that transportation facilities and services have a profound effect on community structure and regional form; on quality of life and expression; on environmental sustainability; on public health; and on economic productivity and competitiveness. In addition, a holistic or integrated transportation planning process will invariably reflect the following:

1. Inclusion of a wide range of participants and perspectives in the transportation planning process.
2. Participation of transportation planning professionals in other processes ranging from other transportation activities (traffic operations, highway design, etc.) to economic development, tourism, public health, and local land use planning.
3. A blurring of boundaries between planning and operations, between planning and design, between transportation and land use planning, between transportation system providers and users, between transportation system providers and public safety agencies.
4. Continual monitoring both of transportation system performance and of overall regional economic, social and environmental conditions.
5. Recognition of the need to evaluate potential actions from the perspective of qualitative as well as quantitative measures of performance.
6. A willingness to establish additional performance measures as new relationships between transportation actions and other conditions are identified.
7. Acknowledgment that the transportation decision process involves clarifying community values and balancing competing objectives – not pursuing the correct engineering “solution”.
8. Repeated refinement of transportation system objectives to reflect emerging community values and priorities.
9. Pursuit of new ways in which transportation facility and service modifications can help achieve emerging community objectives.
10. Recognition that most transportation decisions are societal choices that are informed by subjective as well as objective rationales.⁹
11. Continual expansion of the range of subjects included in the overlap area between transportation planning and other disciplines.

⁹ For instance, a metropolitan area may fervently pursue a major rail transit program as much for subjective reasons – as a public statement of community values and desired outcomes – as for objective measures of expected air quality improvement or cost per passenger served.

Addressing an Artificial Dilemma in Transportation Planning

Transportation professionals find themselves in a transition -- and in a bit of a quandary. The transition relates to a steadily-growing recognition of the often-unquantifiable impacts of transportation systems on social fabric, community integrity, jobs access, "quality of life" and similar concerns. This recognition has fueled a shift in societal expectations of greater integration of transportation with broader community systems. The quandary derives from the transportation profession's traditional processes, which have developed around the use of a limited range of quantifiable criteria and a rule-based orientation that is often separated from consideration of other community systems.

For many decades (or longer), these professionals have followed an approach that, in most cases, treats the design and provision of transportation systems as a technical process -- largely a corollary engineering science to that practiced in the design of physical structures. That is, if empirical tests and the laws of physics are deterministic in designing of a bridge to handle a specific live load, then it is logical that traffic data and travel forecasts must be highly deterministic regarding the scale and design details of facilities and services. Ten, twenty or thirty-year forecasts of the number of left turning vehicles at an intersection approach commonly have served as the primary determinants for the need for a dedicated left turn lane or two in highway projects, for example. Estimates of shifts in modal use have provided the primary basis for technical support for or judgment against rail transit construction. Plans for greatly expanded freeway systems in urban areas throughout the nation (beyond those built in the Interstate era) were based on a belief of the inevitability of gridlock and the unacceptability of its presence. Roads are frequently rebuilt using standards set at design speeds primarily selected to accommodate the current speed of the 85th percentile motorist. Each of these decision processes primarily uses numeric values in a rule-based process to determine the investment or design outcome. Other, "sub-standard" treatments are often accepted only if the desired treatment is physically constrained.

In the current era of community participation, context sensitivity and complex project objectives, this engineering construct of the transportation profession's approach to facility and service choices leaves professionals in a highly vulnerable situation. On one hand, their traditional approaches may appear to others as insensitive and antiquated. On the other hand, transportation professionals have difficulty relinquishing the notion that the traditional process is scientific and produces the "correct" treatment. ***As a result, professionals may have the perception that they are faced with a dilemma: they can either remain true to their education and training and follow the numbers or they can submit to community preferences for decision outcomes that seem sub-standard or unjustified.*** This is a predicament, appearing to pit objectivity against subjectivity in a right vs. wrong model.

However, the dilemma experienced by the transportation professional is largely artificial and unnecessary. For as logical as the engineering construct appears on the surface, the logic falls apart as a basis for decision-making when examined carefully. Under close scrutiny, it is apparent that there is little difference between the numbers-oriented aspects of transportation decisions and the value-oriented aspects. They both reflect implicit social values

and priorities; they both are based on modest understanding of the dynamics of travel and other societal activities. The engineering construct merely creates an artificially high prominence for travel forecasts and traditional design treatments that they do not typically warrant.

The underpinnings of the engineering construct fall apart for the following reasons.

First, placing great value on forecasts of travel behavior and traditional standards implies a grasp of the dynamics of travel behavior that the profession does not come close to possessing.

Second, even if the transportation profession could gain an understanding of such dynamics, would it ever be reasonable to treat ten, twenty, or thirty-year travel forecasts as definitive? Forecasts are dependent upon unpredictable factors related to the state of global peace; the nature of the global economy and international trade; the state of the family and household stability (fertility rates, labor force participation, household formation); the effects of new vehicle, fuel and communications technology; the incidence and magnitude of international and domestic migration; scientific understanding and public values towards global climate change, and similar profound factors. In the light of this uncertainty, can transportation professionals ever use travel forecasts as definitive? Indicative, certainly. Definitive, no.

Third, a fixation on travel demand numbers and traditional design templates overlooks the necessary interaction among competing objectives and interests. In the real world, society does not provide sufficient financial resources to address all facility or service "needs" in ways that fully accommodate travel forecasts and completely adhere to design standards. The real world (as reflected in the economic practices of our own households) requires complex tradeoffs among many sub-optimal actions in order for the outcome of the entire set of decisions to be successful. A practice of pursuing full accommodation of forecast demand or complete adherence to design standards on one facility will cost society the ability to address a greater range of needs and desires. For example, the marginal cost of the second left turn lane to address future travel demand at intersection X may be the inability to entertain any work to address current congestion problems at intersection Y.

Treatment of transportation facility and service design primarily as numeric or rule-based engineering exercises rather than as societal decisions among competing sub-optimal alternatives seriously discounts the legitimate role of other considerations and performance measures in choosing appropriate actions. It is no longer acceptable to treat traffic level of service, desirable lane widths and safe runoff areas be treated as "standards" during project design (often regardless of cost or articulation of marginal benefits) while other features such as landscaping, access management, transit accommodations or convenient pedestrian crossings are frequently considered simply as nice add-ons to be achieved if space and money permits.

CDTC's Approach to Addressing the Dilemma

The dilemma faced by the transportation professional is largely artificial and unnecessary. Transportation facilities and services are indeed essential, integral to society and reflective of societal values and aspirations. The transportation profession should not feel threatened by the notion that there are many demands on and often-competing expectations of the transportation system. Such a situation is simply a validation of the important role the professional plays.

The key to eliminating the angst is to drop the engineering construct from the bulk of the transportation decision-making processes. Understand that while designing a bridge to handle a certain load is a true engineering process, the majority of transportation decisions are not engineering in nature. Most decisions simply reflect a natural process of sorting out objectives and making tradeoffs, with all of these objectives and tradeoffs loaded with value judgements. The professional's job is not to define the "correct" choice, but to articulate the tradeoffs, ensure that facts are respected, and facilitate an informed public decision process.

Specific changes to the transportation profession's approach can allow his or her knowledge and experience to fit more comfortably with a constantly shifting set of societal expectations. A few of the changes embraced by CDTC are to:

1. **Recognize that investments in transportation facilities, services and operations are a matter of choice, rather than a question of finding the "right answer."** CDTC encourages planners and engineers to dispense with the black-and-white notion of building facilities with enough lanes to provide adequate levels-of-service over the entire physical life of the structure, for example. Instead, planners should follow a shades-of-gray philosophy of "what makes sense", scaling investments to the physical context, system function, funding availability and priority of competing needs. The transportation system will not collapse if a project is over- or under-scaled; travelers will adjust behavior to conform to whatever scale is provided.
2. **Admit that transportation investment decisions are value-laden.** If the public indeed is able to adjust to the system provided, then that adjustment itself is a primary outcome of a transportation facility or service change. Transportation actions are therefore more constructively seen from their role in shaping demand and urban form than from their traditional function as mere accommodations of anticipated external demands. Transportation investments affect land use patterns, sense of place, economic interactions and travel behavior. This admission should lead to careful, public articulation of values and desired outcomes. While transportation professionals have scrupulously avoided policies that could be accused of reflecting "social engineering", we must recognize that all transport investments and policies represent social engineering -- each action encourages one kind of behavior and discourages another. This admission should also lead to *early* investment in facilities and services that contribute to desired outcomes and *deferral* of investments that are largely an accommodation or mitigation of undesirable outcomes.
3. **Elevate customer and taxpayer perceptions as key determinants of the appropriate choices to make.** For example, while traffic level of service receives significant attention in many transportation planning efforts, surveys often indicate that travel time reliability and predictability are valued more highly by personal and commercial travelers than is level of service. Further, aren't local newspapers more likely to publish many more complaints about potholes than for traffic congestion? Major highway and transit construction programs are often subjected to voter referenda, but does the transportation profession have any other clear understanding for public support for current investment and design outcomes?
4. If, in fact, there is a need to select among competing sub-optimal alternatives in transportation decisions, is it not logical to elevate taxpayer and customer preferences to the stature currently enjoyed by standards and rules?

5. **Seek a better understanding of travel dynamics.** The need for objective information is ever more present in a decision process that is explicitly value-driven. In order to make intelligent tradeoffs, there must be solid information. This calls for substantial research into critical subjects such as correlations among facility design, site design, travel speed and volume; the effectiveness of management and operation techniques in maintaining system reliability; the characteristics of street design that contribute to positive "quality of life" contributions; the nature of land use changes resulting from highway and transit investments; and travel behavior in a saturated highway system.

6. **Hedge bets by articulating viable and plausible alternative futures.** Recognition of uncertainty in predicting the future should lead planners and policy makers to a new perspective on investment. It leads to less evaluation of static performance (which is the best investment to meet 2030 travel demand?) and more on dynamic change (which one provides an immediate benefit and can be adapted to meet a range of future requirements?). It leads to greater preservation of future options through corridor preservation and modular construction and less scaling of construction to meet long-range forecasts. It also leads to restraint in making large public investments to fit particular transportation paradigms that are subject to radical change (such as freight movement, in which modal choice can swing dramatically in response to relatively small changes in technology or fuel cost).

7. The construct that results from these actions combines aspects of political science and the social sciences with the transportation profession's quantitative skills to meet the challenges of society's current demands on the transportation system. The revised approach is more complex than the traditional engineering construct, but is more likely to be professionally satisfying. It is also more likely to allow the transportation system to successfully fulfill its critical role in society.

8. **6. Potential for totally Level 5 C/AVs to impact highway and bridge design** - In designing for new capacity projects, intersection projects, and other infrastructure projects, 20-year traffic forecasts are considered, and for bridge projects, 30-year traffic forecasts are considered. The New Visions Plan has strong policies against the addition of physical highway capacity except under certain conditions. The design process currently seeks to provide level of service "D" or better in the design year (either 20 years from now or 30 years from now). The New Visions Plan asserts that future potential congestion is a lower priority than existing congestion, which in many locations is worse than level of service "D".

9. The potential for future increased capacity resulting from totally automated vehicles should be strongly considered in highway and bridge design. Designing a larger footprint to anticipate 2040 or 2050 traffic conditions may be totally unnecessary if automated vehicles are fully established in the fleet by then. Designing a larger footprint that is unnecessary is not only prohibitively expensive but can work against the New Visions policies to encourage complete streets and demand management. The NYSDOT should consider if changes to the current design approach are needed to reflect potential changes in future demand as well as potential changes in the congestion threshold that triggers a need for increased capacity. Further, as C/AVs and other technology changes emerge, the NYSDOT should work with its partners within the American Association of State Highway and Transportation Officials (AASHTO) and the FHWA to consider implications to design standards such as lane and shoulder widths.

6

The Power of Principles

Consistency in CDTC's continuing planning process has been established through the adoption of a set of "Planning and Investment Principles" in conjunction with adoption of the long-range regional transportation plan, New Visions. The principles first emerged from the work of nine subject-specific task forces¹⁰. The innovative approach to the use of task forces included the encouragement of each task force to direct staff and consultant exploration of critical material. Direction to the task forces was clear: identify the issues, explore options and report products to the public and CDTC's decision-making structure (Planning Committee and Policy Board). Task forces were instructed to produce draft recommendations if they believed that such recommendations are likely to be viewed as the appropriate, consensus position of CDTC members and the general public. If no such consensus appears obvious, the task forces were asked to carefully articulate the choices facing CDTC and the region as a whole.

Through this work, the nine task forces contributed 25 statements of principle. After public review, CDTC confirmed that these statements indeed represent the appropriate consensus position of CDTC and the general public. From that time (March 1997), these principles have served as the continuing reference point to which the staff, Planning Committee and Policy Board turn when confronted with difficult challenges.¹¹

With subsequent revisions and extensions of the New Visions plan, task forces and working groups have contributed additional draft principles later confirmed by CDTC as policy. In 2004 during the development of New Visions 2030 (CDTC's long-range regional transportation plan) CDTC developed a foundation of 31 Planning and Investment Principles and a commitment to ensure that all CDTC actions are consistent with these principles. Ten years later in the development of New Visions 2040, CDTC condensed these 31 principles into the following 12 Planning and Investment Principles.

The power of a commitment to well-vetted, broadly-held principles is substantial. It provides not just a foundation but a "backbone" to the organization to withstand pressures to simply be expedient. It also anchors the organization's credibility and contributes to its stature in the regional community.

¹⁰ The first New Visions effort (1993-1997) used task forces in the following areas: Infrastructure, Goods Movement, Bike & Pedestrian Transportation, Transit Futures, Demographics and Land Use, Special Transportation Needs, Arterial Management and Expressway Management.

¹¹ One example of the use of these principles can be seen in CDTC's response to the 2009 federal stimulus program. The package of projects identified for the use of stimulus funds was carefully constructed to respect the adopted principles, such as being jurisdiction-blind, intermodal, and focused on system preservation.

CDTC'S 15 ADOPTED PLANNING & INVESTMENT PRINCIPLES

The following is a list of the principles adopted in CDTC's New Visions 2050 Regional Transportation Plan. CDTC attempts to respect these principles in all its actions.

The New Visions planning and investment principles guide decision-making at CDTC. As statements of principle, they provide a framework for funding decisions, project selection criteria, corridor-level planning and project implementation. The principles state when and how CDTC believes transportation investment is warranted, and when it believes such investment is not warranted.

1. Invest in a Quality Region – Transportation programming & planning is multi-modal and multi-programmed. Fair & equitable investments in all these modes & programs are needed to make our region a Quality Region.

Transportation investments will help preserve and enhance the Capital Region's existing urban form, infrastructure, and quality of place. Neighborhood-based local planning efforts are important to the success of an overall regional plan that emphasizes livable communities and smart growth.

Transportation investments will:

- Plan and build for all modes of transportation, including pedestrian, bicycle, public transit, cars, trucks, marine, aviation, and rail;
- Support healthy urban, suburban, and rural communities;
- Encourage concentrated development patterns and smart economic growth;
- Link transportation planning and land use planning in order to reduce conflicts and improve both;
- Protect sensitive environmental resources.

2. Support Economic Development – Transportation is critical to our region's economy.

New Visions articulates the transportation investment needed for sustainable regional economic growth. All indications are that the region's quality assets are becoming apparent to decision makers outside the region. Transportation choices, strong urban areas, affordable and diverse housing locations, good schools, colleges and universities, ease of mobility, modern air and rail transportation facilities, cultural and recreational opportunities and a clean environment are significant criteria in location decisions of advanced technology firms. These factors support the region's economic development and business climate. CDTC will partner with New York State to encourage regional efforts to build a strong, sustainable economy.

3. Make Investments Regionally Equitable – Transportation investments will address all needs fairly and equally.

Funding for appropriate repair, replacement and reconstruction will be based on the function and condition of the facility -- not ownership. Investments should meet the needs of all users of the transportation system, in a manner that increases access to transportation or does not disproportionately impact people with disabilities, and minority and low-income populations.

4. Preserve and manage the transportation system – Transportation funding must be sufficient to both repair and sometimes replace our highway, bridge, and transit infrastructure.

New Visions remains committed to the maintenance, repair, replacement, reconstruction and right-sizing of the existing freight and passenger transportation facilities in a cost-effective manner that protects and enhances rideability, public safety, accessibility, and serviceability. Currently the needs for replacing bridges, reconstructing pavement, and investing in transit and port facilities outweigh available funding. Renewing existing infrastructure in our communities is fiscally responsible and consistent with smart growth.

CDTC needs to ensure that system preservation and system reconstruction are balanced, and that roads and bridges in our cities and rural communities are equitably considered. Continued capital investment in our transit system, ports, and airport and their connections to other surface transportation will remain a priority.

5. Maintain Travel Reliability – Reliable traffic flow is more important than reducing congestion – traffic congestion is often a sign of an area's economic vitality.

Managing traffic flows on the Capital Region expressway and arterial system is critical for both economic and social reasons.

- Congestion Management is much more cost effective than highway capacity increases or new lanes. Congestion alone does not justify increasing highway capacity or adding new lanes.
- Congestion management actions will include traffic management center improvements, incident management, managed lanes, managed tolls, traffic information technology, traffic signal coordination, parking management, and travel demand management strategies such as supporting more transit, pedestrian, and bicycle travel, carpooling, vanpooling, carsharing, bikesharing, and flexible work hours.
- Some congestion is acceptable when the community deems it acceptable, or when it results from balancing the needs of other transportation modes such as pedestrian, bicycle, and transit.

6. Invest in Safety – Our region will move toward eliminating transportation related deaths and serious injuries by 2050.

A “move to zero” will require creating a travel environment for all users that reduces risk and considers the context of communities. Through continued encouragement of best safety practices, evaluation of current data, and by monitoring the effectiveness of implemented countermeasures, over time CDTC’s safety program will support the potential reduction of fatal and serious injury crashes.

This will require a long-term commitment at all levels of government to shift policy and transportation infrastructure design to support a cultural change in how our transportation system is used and operated.

7. Invest in Security – Protection of critical infrastructure from natural disasters, acts of terrorism & cyberattack is of increasing concern. Scenario planning & computer modeling will support regional security planning efforts.

CDTC will support regional security planning efforts through modeling transportation system related scenarios, encouraging resiliency planning and providing technical support to all levels of government as they develop security plans. Through these efforts, CDTC will be available to assist with the reduction of threats to the regional transportation system, transportation facilities, and transportation system users.

8. Invest in Complete Streets – Street design will serve all users equitably including pedestrians, bicyclists, transit riders, freight, and drivers.

Transportation investments are made based on a complete streets framework which supports the convenient and safe travel of all people — of all ages and abilities as appropriate to a facility’s community context.

Utilizing a complete streets framework ensures that transportation investments are consistently planned, programmed, designed, operated and maintained with all users in mind – including bicyclists, public transportation vehicles and riders, pedestrians of all ages and abilities, and local delivery needs.

Successful implementation of a complete streets framework will be achieved by working with municipalities to improve communication and coordination, training and education, and design standards and other resources.

9. Encourage Bicycle and Pedestrian Travel – Recognize walking & bicycling as socially, economically, & environmentally responsible & healthy approaches to improving the performance of our transportation system. Bicycle and pedestrian improvements will be considered from the perspective of developing a system and not just based on whether a particular facility is currently used. A regional system of sidewalks, bicycle facilities, & multi-use trails will encourage safe bicycle & pedestrian use.

This investment principle builds off of the New Visions Complete Streets principles and recommendations. Many people rely on walking and bicycling for transportation every day. All streets must be able to safely accommodate emerging mobility services and technologies like bike share, electric pedal-assist bikes, and possible electric scooters in the future.

10. Move Freight Efficiently – Our freight system is crucial to the economy; it will be efficient and automated, and will minimize its impact to communities.

CDTC’s freight planning efforts will be comprehensive enough to encompass all modes, including air, water, rail, and highway. Maintaining the health and improving the efficiency of freight facilities in the region through public/private partnerships is a high priority. CDTC’s planning efforts will embrace freight’s key contributions to regional prosperity, while also trying to mitigate the negative impacts of all modes of freight movement on local communities.

11. Invest in Transit – Innovative and viable transportation services support concentrated development by providing equitable access to reliable and affordable transportation.

The future transit system will:

- Be an essential element of the region's social, economic, and cultural fabric;
- Provide high quality fixed route transit in core areas of the region;
- Reduce congestion, improve air quality, and save energy;
- Form the backbone for managing travel demand;
- Provide essential mobility for those who do not operate a private vehicle;

12. Provide Essential Mobility for All - A Coordinated Public Transit – Human Services Transportation Plan should identify opportunities to assist more people, reduce service gaps and overlaps, and increase the cost effectiveness of the services provided..

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13. Prioritize Affordable and Convenient Travel Options - - Regional efforts will prioritize affordable and convenient travel options and programs that encourage behavioral shifts away from single occupancy vehicle travel and help balance the transportation system among driving, biking, walking, taking transit, carpooling, vanpooling and telework.

Incorporating TDM into transportation planning helps optimize infrastructure and land use investments by balancing the system among all travel modes. Travelers in our region should be able to choose from an array of travel options for their work commutes and all other trips. Regional mobility services will make it easier for everyone to travel, regardless of the mode they choose, by offering services such as bikesharing, carsharing, and on-demand microtransit ridesharing. CDTC, all mobility service providers, employers and the region's municipalities should work together to increase access to all travel modes by expanding public and private infrastructure for non-SOV modes.

14. Preserve the Environment – Transportation choices should improve our environment, not harm it.

Environmental stewardship is crucial to the success of and quality of life in this region. Transportation investments must improve or preserve the region's cultural and natural environment. Transportation investments will not encourage development in environmentally sensitive areas and will help to preserve rural character. Transportation investments will support alternative fuel vehicles and greenhouse gas reduction. Environmental best practices will be incorporated into all projects.

15. Leverage Technology – We must plan for new, smarter, better, and rapidly-changing transportation technology.

Advancements in technology, such as self-driving cars, self-adjusting traffic signals, smart phone applications, and shared mobility will have tremendous and wide-reaching impacts on future transportation. These impacts include, but are not limited to, decreasing congestion, providing transportation to older adults and people who have disabilities, reducing traffic crashes, and more.

Integrating Transportation and Land Use

Overview

The size of the federal transportation program and the collective responsibility of the MPO members in directing these funds represent a significant opportunity to foster integration of land use and transportation planning -- but the MPO must be engaged in these issues and members must be prepared to use MPO clout in encouraging linkages.

A series of initiatives by CDTC has been successful in meeting this challenge. While this effort must be considered a "work in progress", the initiatives have had the cumulative effect of putting the land use - transportation relationship on the table for discussion more often in the Capital District than in many other urban areas. These initiatives have included a number of sequential steps spanning more than two decades:

1. Adding suburban towns (on a rotating basis) to the MPO policy structure. (beginning in 1976) Adopting a policy of permanent membership for all municipalities with population greater than 50,000. (2003)
2. Shifting the focus of the long range regional plan from new highways to localized solutions to critical problems. (beginning in 1981)
3. Assuming the lead role in traffic modeling. (beginning in 1987)
4. Offering communities a lead role in addressing existing traffic problems and the traffic impacts of cumulative development through a shared-cost "Cooperative Transportation Plan" concept. (beginning in 1988)
5. Developing a regional policy on public-private shared highway financing responsibilities. (1989)
6. Offering communities technical assistance in reviewing routine site impact studies and assessing traffic mitigation fees. (beginning in 1991)
7. Establishing Transportation Improvement Program (TIP) and screening criteria and Congestion Management System (CMS) principles that require land use management as a pre-requisite to highway widening. (1992)
8. Assigning priority use of federal funds to implementing the projects and programs identified in the cooperative transportation plans. (beginning in 1993)
9. Participating in design committees to assure context sensitive design, community design, access management and transit consideration in resulting roadways. (beginning in 1994)

10. Engaging town, county and city officials along with business leaders, freight providers, transit providers, environmental advocates and the general public in a simultaneous, fundamental assessment of policies affecting all aspects of the transportation and land use systems. (1994- 1996)
11. In the course of the assessment, developing new technical tools for identifying land use / transportation conflicts, the full cost of social and environmental impacts and raising their profile in decision making. (1995)
12. Developing an access management, bicycle and pedestrian training program for local communities. (1995)
13. Through the resulting New Visions regional transportation plan, elevating "community compatibility" projects to a status in the plan comparable to that of infrastructure repair or congestion relief. (1997)
14. Through the plan, setting policy to design future facilities to meet desired -- not trend -- travel forecasts. (1997)
15. Implementing the plan through earmarking federal capital funds in the TIP for "community compatibility" improvements as an important element of the regional transportation plan. (beginning in 1997)
16. Further earmarking federal planning funds (including capital funds converted to planning usage) for transportation / land use "linkage" planning efforts. (beginning in 1999)
17. Completing the land use / market study of the key rail corridor and adopting a streetscape and Bus Rapid Transit plan for the corridor. (2001) Jointly refining the BRT plan with CDTA (2005)
18. Initiating the next generation long-range planning effort to review recent history and address unresolved issues including regional settlement patterns and "smart growth". (2001-2006)
19. Working with several partners, including the Capital District Regional Planning Commission, Capital District Transportation Authority, Center for Economic Growth and New York State Department of Transportation on principles, strategies, analyses and other initiatives that complement and help advance CDTC's actions.
20. Developed a new TIP candidate project evaluation system, which included the existing benefit/cost ratio and replaced the use of the existing "filters" and "networks" that were not easily understood in project evaluations and potentially biased the process against rural projects. The new system and criteria result in higher project evaluations for projects which integrate transportation and land use.
21. Created new Advisory Committee consisting of member representatives, and stakeholders, and advocates from the private sector. There are now 6 Advisory Committees, one for Bike/Pedestrian, Complete Streets, Equity, Freight, Human Services Transportation, and Regional Operations and Safety. These committees which "advise" the Planning Committee and staff on their specific program issues including our New Visions long-range plan, TIP projects, UPWP tasks, studies, etc.

22. Completed a Local Bridge Preservation Study which evaluated the condition of hundreds of local bridges, developed repair strategies, and estimated the costs of these repairs. The information was used by local sponsors to apply for funding from the BRIDGENY program.
23. Initiated new Title VI and Americans with Disabilities Act (ADA) program, including new Title VI Plan, a new Limited English Proficiency Plan, and assistance for members creating required ADA Transition Plans.
24. Initiated new Equity program, including new Equity Advisory Committee, new TIP project merit score with equity criteria, completing equity studies, and requiring all studies to address the impacts of transportation on disadvantaged communities.
25. Completed new Regional Plans and updated existing plans. Created a new Regional Freight Plan, Local Roads Safety Action Plan, and Local Bridge Preservation Plan. Completed major updates of our Human Services Transportation Plan, our Regional Trails Plan, and our Congestion Management Plan.
26. Offered Complete Streets training and National Association of City Transportation Officials (NACTO) bike/pedestrian/transit guidelines training to our members on a competitive basis.
27. Re-emphasized the need for Climate Change planning by implementing new VERPAT computer model and the EPA MOVES model, adding new TIP project merit score with environmental criteria, and integrating our Clean Communities program into all our planning processes.
28. Creating local performance measures and program beyond those required by MAP-21 and the FAST Act. CDTC has had performances before, but we have increased the number of them (now 54), our data, and our monitoring and have included them in our planning documents, like New Visions 2050.
29. Established a joint CDTC/CDRPC Technical Assistance Program. Members applied and were competitively selected for small project assistance from CDTC and CDRPC staff. Projects were limited in scope and could be completed with roughly 75 hours of staff time within a few months.
30. Simplified New Visions 2050 by replacing 25 planning principles, 10 strategies, 43 actions and a 17-element budget plan with 15 planning principles and 150 recommendations and strategies; and made it more readable and attractive by creating a 55-page summary and 14 very technical "White Papers", and adding easily understood graphics.
31. Established a local traffic signal timing program. The program will evaluate local traffic signal timing using CDTC staff and some consultant services. It will recommend new signal timing plans at little or no cost to the owner, reduce congestion, produce fuel savings, and decrease pollution.

The following provides further elaboration on these initiatives. While no two MPOs face identical challenges and opportunities, one or more of the CDTC initiatives may have similar benefit to other regions in moving land use and transportation considerations toward integration.

Step 1. Flexible Policy Structure (starting in 1976)

CDTC was created in 1964 in the mode of other upstate New York transportation planning groups with local government representation limited to counties and cities. In 1976, CDTC revised its policy structure to add two rotating positions for direct representation of towns and villages. Over the years, these positions have been increasingly reserved for suburban towns. A one-year period as an alternate and a one-year period as member allow the two positions to involve four key town leaders in the MPO policy structure at any time. Over a period of a few years, nearly all of the fifteen or more towns experiencing development pressure have a direct presence at the MPO table.

The effect of this (particularly relative to other MPOs in larger urban areas of New York) is a greater awareness and appreciation of the MPO and its responsibility by suburban communities experiencing development pressure and grappling with arterial management difficulties.

In 2003, CDTC adopted a new policy to provide permanent membership to any municipality over 50,000 in population. This immediately resulted in adding the town of Colonie, with a population of 80,000, to CDTC's policy board.

To complement the expanded role of local government, CDTC has also expanded the membership of key transportation agencies over the years. The New York State Department of Transportation, New York State Thruway Authority, Capital District Transportation Authority, Albany County Airport Authority and the Albany Port District Commission have full membership rights on the CDTC. This has allowed CDTC's policy structure to reflect well the intended role of regional transportation forum intended in federal law.

Step 2. Shifted Regional Transportation Plan Focus (embraced in 1981)

CDTC's first generation regional plan completed in 1971 provided a major highway element and transit element. The highway element was composed primarily of bypasses and other new expressways and surface arterials. Many of these projects proved to be infeasible, having been evaluated primarily on the basis of their contribution to the overall transportation system -- not on the basis of their acceptability to the community.

In 1981, the regional transportation plan was thoroughly revised. The new plan set priorities among twenty-four corridors and areas containing traffic congestion, high crash rates, physical deterioration or land use pressures. The new plan stated that no specific recommendation would be placed on the regional plan until after a localized study was completed.

The result of this action was to shift attention from the state (what is the state proposing for our community?) to the community (what do we want to see happen?) in a cooperative process for finding acceptable solutions.¹²

¹² Later, CDTC's Congestion Management System (CMS) set relative priorities for traffic analysis among various corridors and areas based on 1990 and projected 2000 levels of congestion. The emphasis on local solutions remained, however, even after the CMS was established.

Step 3. Assuming the Modeling Function (1987 decision)

While the location of the transportation model does not appear to be central to a discussion of land use policy, CDTC's choice in 1987 to establish its own modeling capabilities was significant in meeting the land use challenge. Shortly after CDTC's decision was made, NYSDOT shut down its own modeling procedures. From that point, CDTC became the source of official traffic forecasts and modeling guidance. Today, CDTC contracts with NYSDOT using Surface Transportation Program funds to provide forecasts to NYSDOT designers, developers and consultants for various highway and site development projects.

Further, CDTC's investment in data collection for model calibration improved its technical credibility in the eyes of local government. At the point that a model became available through the MPO, local government interest in exploring land use / transportation issues cooperatively with CDTC staff increased significantly.

Step 4. Cooperative Transportation Plans (1988-1995)

Perhaps the most significant integration initiative taken by CDTC was to position the local plans needed to implement CDTC's approach to regional planning as an opportunity for local government. Beginning in 1988, CDTC began entering into contractual agreements with individual communities at the request of the community. The scope of the work is mutually determined to both address local concerns and advance regional system planning. Transportation modeling and alternatives assessment are performed by CDTC staff. Basic land use information and definition of future land use scenarios are provided by the community. The prime "client" is the town planning board.

Costs of the "Cooperative Transportation Plans" varied with the scope and ranged from approximately \$30,000 to close to \$80,000. The community's share of the cost also varied, depending upon the issues. Communities have committed as little as \$8,000 and as much as \$40,000 in support of CDTC staff work.

From 1988 through the mid-1990's, CDTC contracted for work in seven communities. While these efforts were scheduled in response to community interest, they parallel regional priorities well. The studies, combined with traditional corridor studies performed by CDTC and NYSDOT without a contractual relationship with the municipality, covered all of the ten most congested corridors in the metropolitan area.

These studies have, to varying degrees, resolved long-standing issues regarding the desirability of highway widenings in these communities. They have also raised and begun the discussion toward resolving issues of access management, appropriate levels of "build out" and equitable levels of financial contributions to be required of developers to mitigate traffic impacts. Requirements for demand management and supplemental transit service have also derived from these efforts.

This type of effort has been superseded in large measure in recent years by CDTC's Community and Transportation Linkage Planning Program (see step 17 below). The key difference between the Community Transportation Plans of the early 1990's and the Linkage studies is the greater emphasis of the Linkage studies on *community land use actions* as opposed to *transit or highway plans*. The Linkage program was built on the back of the Community Transportation Plan concept and has allowed CDTC to have substantial engagement with critical land use issues in the region.

Step 5. Public-Private Financing Policy (adopted in 1989 and maintained since)

In February 1989, the New York State Department of Transportation issued a policy on public-private highway financing. For the first time, the state indicated that it would expect contributions from municipalities for highway improvements on state highways necessitated by cumulative local development. Prior to this point, only large-scale developments that individually triggered improvements would be required to pay for or carry out highway work.

Seizing the opening offered by NYSDOT, CDTC worked with local governments and the business community and adopted its "Public - Private Highway Financing Policy" in September, 1989.¹³ The policy provides alternative approaches (focusing either on new development or all development in a corridor) to carefully associate trip impacts from individual properties with the costs of accommodating cumulative growth.

These formulas have been applied to development projects both on and off the state system in several communities and serve as the underpinning of shared cost (combined federal aid - mitigation fee) projects included in CDTC's transportation improvement program. Transportation mitigation assessments exceeding \$10,000,000 have been assigned by the town of Colonie to development in the airport area. These funds have combined with county, state and federal funds to complete approximately \$30,000,000 in highway improvements. CDTC has completed more than 300 Town of Colonie project reviews and more than 30 project reviews for the Town of Malta.

In addition, a portion of the transportation mitigation funds in the airport area were provided annually to the Capital District Transportation Authority to support transit shuttle services.

In 2018 CDTC began calculating mitigation fees for new development in the Town of Malta in Saratoga County.

Step 6. Provision of Technical Assistance (beginning in 1991)

CDTC has long been responsive to community concerns, and has programmed staff time for "provision of services" on call. This commitment was redoubled in the late 1980's after development of regional modeling capabilities. CDTC currently offers technical assistance to all communities in the review of site impacts of development projects.

This service is used to varying degrees by communities; Albany County and the town of Colonie are the most active and they contractually supplement CDTC's federal funding with \$30,000-\$60,000 annually in county and town funds to carry out this activity. These funds are used to review projects, calculate mitigation fees and recommend specific actions to require of developers that advance system plans. Fees collected for the TIP projects in the airport area are identified by CDTC staff as part of this contractual effort.

In the context of administering site review and identifying mitigation fees, the CDTC staff also identifies access management actions that can be taken by developers. In many cases, driveway consolidations and partial provisions of service roads can be used to reduce the mitigation bill.

¹³ Additional detail is provided in CDTC's "Procedures for Public-Private Highway Financing in the Capital District", 1989.

Step 7. ISTEA-era TIP Screening Criteria (adopted in 1992)

In 1992, CDTC revised its Transportation Improvement Program (TIP) project evaluation process to reflect considerations of the Intermodal Surface Transportation Efficiency Act (ISTEA). The process developed in conjunction with environmental groups and other interested parties provides three stages of TIP development -- screening, merit evaluation and programming. The merit evaluation process is a refinement of historic CDTC objective and subjective evaluation of projects across a broad range of issues (impacts on travel cost, mode choice, crash cost, pavement condition, air quality, etc.). Programming is performed by using "fact sheets" for each candidate project and consciously attempting to select the "best" projects while balancing funding commitments by geographic area, mode and project type.

With respect to advancing land use planning objectives, the screening criteria provide the greatest leverage in the process. Largely because of CDTC's success with communities in addressing high-priority corridors with integrated land use - transportation studies, CDTC's participants were willing to establish the requirement for land use management as a pre-requisite for highway work. Essentially, for any air quality "non-exempt" highway project (linear widenings, highway construction on new alignment) to be evaluated, there must be a commitment to land use management from the community.

Specifically, CDTC's screening process includes several "consistency" requirements that must be met.¹⁴ They are:

1. All projects must be consistent with the regional transportation plan.
2. All projects must be consistent with or complementary with the facility in the adjacent jurisdiction if the project is near or crosses a municipal boundary.
3. Fixed capacity improvements are required to be linked to local land use management. (*Capacity projects designed primarily to serve through traffic or strategic statewide concerns are not addressed by this requirement.*)
4. All projects must be consistent with community desires as documented in local land use plans or other policy documents, at public meetings, or through other means.
5. The fact that most of the candidate highway projects considered during the 1993-98 five year TIP update were derived from CDTC's local studies made the land use management requirement easy to put in place. Once in place, the policy has been continued as additional leverage with communities to encourage comprehensive planning -- *CDTC will not entertain highway capacity projects without land use planning and access management commitments.*

¹⁴ Complete discussion of CDTC's TIP evaluation process can be found in CDTC's *Transportation Improvement Program, 1999-2004*, May 1999.

Step 8. ISTEA-era TIP Funding Priority (programming process since 1993)

The preceding steps positioned CDTC to make good on its commitments to integrate land use and transportation planning. Cooperative studies having taken place in high priority corridors, projects in these corridors passed the screen of land use management. The merit evaluation confirmed their benefits and cost-effectiveness.

As a result, the increased federal funding authorizations from ISTEA and the project selection flexibility provided to MPOs through ISTEA were used in large part to implement CDTC's regional plan. Major commitments were made to regional initiatives, including expressway surveillance, arterial signal coordination, transit signal prioritization, park-and-ride lot construction and travel demand management.

Of critical importance to these decisions was the trust level reflected at the CDTC table. The cooperative planning efforts and the strong NYSDOT participation in collaborative planning allowed CDTC members to work cooperatively to program all new federal funds. CDTC's influence was not limited to Surface Transportation Program (STP) or Congestion Mitigation / Air Quality (CMAQ) funds alone. Around the MPO table, projects from all quarters (including NYSDOT) were examined and all federal funds (including National Highway System, bridge and interstate categories) were used to fund the highest priority projects. Without this cooperative atmosphere and the ISTEA funding flexibility, it may not have been possible to convert very many local plans into TIP projects.

Step 10. Design Committees (beginning in 1994)

In some, but not all cases, NYSDOT has authorized design committees composed of NYSDOT and CDTC staff, design consultants and local communities to direct the alternatives evaluation and design of key projects. The basis for using a committee approach is the origin of many of these projects in the cooperative CDTC-local plans completed prior to the projects being added to the TIP.

Access of the MPO staff and local government to the design process has led to innovative land use - transportation integration features. Examples of the design committee influence on project design include such features in the recent airport area projects as: more community-compatible (lower) design speed; boulevard configuration; reduced intersection radii to improve pedestrian friendliness; spatial separation of bike and pedestrian facilities from the vehicular alignment; agreement with local property owners for parking lot connections; consideration of pedestrian access routes to transit service; prohibition of curb cuts and consolidation of intersections; and participation of property owners in selection of the preferred alignment.

Step 11. Initial "New Visions" Planning (1994- 1996)

The 1993 TIP effort established a multi-year capital program for the Capital District. It also provided the Capital District the opportunity to step back from incremental decisions to examine more fundamental choices -- where is the region heading? -- what is the area's attitude toward accommodation of single occupant vehicle (SOV) travel? -- what is the future of the older urban areas? -- how will continued suburbanization influence quality of life?

These "big picture" issues could not be addressed adequately in the context of TIP development alone or even in the context of a cooperative land use and transportation plan for a single community or travel corridor. For this reason, CDTC launched a major effort to engage in dialogue and technical analysis of "visions" for the metropolitan area.

Initiated in June 1993, the effort dominated CDTC's planning agenda for several years. The effort made use of nine separate task forces, each focusing on a specific subject. These subjects were: demographics, technology and development patterns; transit futures; urban issues; arterial management; expressway management; bicycle and pedestrian travel; infrastructure renewal; special transportation needs; and, goods movement and freight issues. Over 100 individuals from state and local government, transportation providers and user groups, environmental and community groups and universities engaged in task force work for several years.

Some characteristics of the New Visions effort were unique, particularly the simultaneous nature of the exploration of multiple policy issues. The task forces shared a common charge: first, to articulate current and null future conditions; second, to identify issues needing attention; third, to suggest actions. The task forces directed CDTC staff effort, consultants and NYSDOT effort to address issues. Rarely have such a wide array of issues been addressed simultaneously to the depth to which CDTC and its task forces plunged. The simultaneous exploration of a wide range of issues in depth made the subject of *opportunity cost* a central feature of the thought process -- actions were selected in a given subject area not because they were the "best alternative" to address that subject, but because the action fit nicely into a reasonable set of actions to address all subjects.

During the effort, CDTC issued an extensive series of technical reports ranging from detailed 20-year pavement and bridge reconstruction needs on the entire highway system to paratransit requirements for an aging society, from arterial / land use conflicts to a regional Intelligent Transportation System (ITS) plan. Studies addressed opportunities and costs for fixed guideway (rail) transit and explored long-range operational challenges on the free-way system.

The process included public conferences, the publication of a workbook and worksheets for the public to engage in policy debates, and a one-year public review period of preliminary results before the plan was drafted. After such extensive and intensive examination of issues, policies and priorities, CDTC had broad support in adopting its New Visions plan in March 1997.

The New Visions plan resulted in MPO adoption of 25 principles stating a basic approach to the integration of transportation into the economy and community, ten strategies, 43 actions and a 17-element budget plan.¹⁵ Of particular relevance to CDTC's commitment to transportation and land use integration are the following additional principles adopted in New Visions:

- Principles making a commitment to urban revitalization as a transportation policy
- Principles recognizing the need for improved local planning to achieve regional transportation objectives
- Principles affirming a commitment to multi-modal transportation systems with competitive modal options
- Principles acknowledging the role of transit in supporting desired land use patterns

¹⁵ Further details of the New Visions Plan can be found in *New Visions 2021*, published by CDTC in October 2000.

Step 12. New Technical Tools (used 1995 - 2010)

The New Visions effort provided the time and necessity to find or invent tools to help with the public dialogue. Several tools were used by CDTC that have a direct bearing on the overall effort to integrate land use and transportation decisions. These include:

1. Use of "full cost accounting" to identify the total societal cost of various policy choices. Full cost accounting includes a more complete articulation of the social and environmental costs and benefits of the provision and use of the transportation system than found in typical economic analyses. An example of non-traditional cost elements included in the full accounting is the cost to society to provide parking spaces on street, in commercial lots or in private garages. Incorporation of such a cost in the "full cost" of the system allows estimation of the savings in such expenses resulting from major transit system investment or pricing alternatives.¹⁶
2. Agreement on a comprehensive set of performance measures for consideration of alternative actions. In addition to economic cost, additional core measures (appropriate for all actions) and supplemental measures (specific to subject) were used to articulate the impact of the wide range of actions being considered in the New Visions effort. Two "level of compatibility" (LOC) measures helped identify and predict arterials with conflicts between the highway system and adjacent land use. Scaled from A to F in a manner paralleling level of service, LOC measures were used by the New Visions arterial management task force to elevate the importance of access management in the regional plan.

Traffic-land use core performance measures are calculated in the following way:

Residential Use-Traffic Conflict Index: This index reflects the relationship between the amount of traffic an arterial segment carries relative to the distance separating its residential driveways. It is calculated by dividing average weekday traffic demand by the average distance between driveways along a section of highway.

Arterial-Land Access Conflict Index: This index reflects the relationship between the amount of traffic an arterial segment carries relative to the distance separating its commercial driveways. It is calculated by dividing average weekday volume by the average distance between commercial driveways.

(The level of compatibility thresholds are shown in Table 2.)

Residential Use-Traffic Conflict	Conflict Index	Level-of-Compatibility
No conflict - no residential use or no traffic	0 - 4.9	A
Little residential use or modest traffic	5 - 9.9	B
Both traffic and residential use noticeable; a concern	10 -24.9	C
Significant conflict between traffic and residential use	25 -49.9	D
Continued residential use may be unsatisfactory	50 -99.9	E
Continued residential use may not be possible	100 +	F

¹⁶ Complete documentation of the full cost accounting approach used by CDTC is included in *Estimated Marginal Monetary Costs of Travel in the Capital District: Transportation Policy Analysis Based on Incremental Cost and Performance*, CDTC, April 1995.

Arterial-Land Access Conflict	Conflict Index	Level-of-Compatibility
Arterial function not affected by access	0 - 9.9	A
Aware of turning traffic, but not an issue	10 -19.9	B
Access traffic noticeable; a concern	20 -49.9	C
Frequent conflict between access and through traffic	50 -99.9	D
Persistent conflict between access and through traffic	100 -199.9	E
Either access or through movement not functional	200 +	F

3. Development of a land use pivot model. Calibrated against historic local development relationships the model considered the interaction among property taxes, availability of sewer and water infrastructure, the amount of developable land, highway accessibility and community "intangibles" in predicting future development. The model was used in the New Visions effort primarily to adjust existing forecasts of development to reflect the impacts of various highway, transit, land use or pricing options. Its primary benefit was in placing the proper perspective on the transportation - land use relationships in the Capital District.

The model led to conclusions that the actions at CDTC's disposal over the next 20 years are not likely to significantly influence the location of development on a regional scale. However, they may be able to influence community form, local transportation - land use interaction and quality of life. As a result, quality of life and system management issues gained status in policy discussions.
4. Identification of the safety cost of poor access management. CDTC staff explored the correlation of crash history with driveway spacing and LOC measures. This effort led to the estimation of an \$89 million dollar annual savings potential from implementation of arterial management policies, simply by reducing the annual societal cost of midblock crashes by 26%.
5. Publication of an access management policy as part of the New Visions plan. The arterial management task force developed several technical tools for ongoing use in promoting arterial management. These included publication of driveway spacing standards for commercial corridors, signal spacing standards, and standards for maximum acceptable traffic volumes for residential and arterial streets. The tools have been used in subsequent years to assist municipalities consider impacts of development proposals on traffic flow and community quality of life.¹⁷

Step 13. Access Management and Bicycle/Pedestrian Training (beginning 1995)

A direct product of the New Visions arterial management task force was CDTC's publication of an arterial management training program in 1995. Additionally, CDTC staff developed a local community training program for bicycle and pedestrian issues. In the years that have passed, the CDTC staff has conducted training programs in several local municipalities, sharing both the issues raised in the New Visions effort and arterial management and site design concepts to address the issues.

¹⁷ Full discussion of CDTC's arterial management plan and evaluation of land use - highway compatibility can be found in "Development of an Arterial Corridor Management Transportation Strategy for the Capital District Region" prepared by CDTC's Arterial Corridor Management Task Force and CDTC staff; principal authors David P. Jukins and Anne B. Benware, CDTC, December 1995.

Step 14. New Visions Product: Policy on Traffic Forecasts for Facility Design (adopted 1997)

In the New Visions plan, CDTC estimated that the region could not achieve goals for social, environmental and economic costs, access and mobility and travel safety without moderating the forecast growth in vehicle travel. As policy, CDTC lowered the projected 2015 travel levels by about 15% to target levels that could be accommodated while improving goal attainment. Through this approach, CDTC placed great importance on improved site and community design, improved pedestrian and bicycle accommodations, and substitution of communication technology for travel. Success in these areas would be required to accomplish the necessary dampening in vehicle travel growth and resources would be required to achieve such levels of success.

Since the adoption of New Visions, CDTC staff has supplied future traffic forecasts for planning and design purposes that reflect the dampened growth trend. This approach, combined with CDTC's policy for risk assessment (sensitivity analysis) of traffic forecasts in highway design and NYSDOT commitment to context sensitive design has been significant in shifting highway project design toward a role of helping create desired community outcomes.

Step 15. New Visions Product: Priority for Community Compatibility Projects (programming process beginning 1997)

The comprehensive nature of the New Visions effort and the use of tools that provided a level playing field for consideration of all issues had an impact on the final plan. In the fiscally-constrained adopted plan, there are seventeen budget elements each with an assigned annual funding level. The seventeen elements and the established funding levels are shown in Table 3.

The list of budget elements includes traditional project categories such as bridge repair, transit capital and transit service. But the list also provides budgetary status to non-traditional elements such as Intelligent Transportation System investments, "community compatibility" and economic development projects and others. The plan's budget accommodates the fact that there are many objectives of the transportation system and the long-range plan, and that steady progress is desired in all aspects of the plan. The result of this approach is to make room for project proposals other than those that address infrastructure, capacity or transit. In the new plan, there is budgetary room set aside for projects that focus, for example, on safety or on delivery access.

Table 3
New Visions 2050 Finance Plan: Regional Transportation Plan Budget by Element (Annualized Cost in Millions)

	Previous Invest-	Current Invest-	New Visions 2050 Full Implementation	Update Notes
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REGIONAL PROGRAMS		ment Levels (2007-2012)	ment Levels (2016-2021)	Reduced Funding	Full Funding	
1	Intermodal Facilities	31.9	31.0	25.0	42.0	New estimate.
2	Transit Infrastructure	30.0	36.0	36.0	55.0	New estimate.
3	Transit Service	80.0	85.0	80.0	130.0	Operating funds include federal and State operating funds
4	ITS (Technology) and Traffic Infrastructure	6.3	2.8	4.5	8.0	Derived from regional operations working group and TIP discussions. Reflects reduced need for TMC under autonomous vehicle future.
5	ITS (Technology) and Traffic Operations					
6	Highway Rehab, Reconstruction and Redesign – Priority Network	67.5	23.3	60.0	154.0	Estimate from infrastructure model results, infrastructure task force and ADA working group discussions.
7	Highway Rehabilitation and Reconstruction – Other					
8	Bridge Rehab and Construction	55.1	33.5	72.0	106.0	Local need based on CDM bridge study. State need developed from info reported in NYSDOT's draft Asset Management Plan.
9	Highway and Bridge Maintenance	191.0	191.0	218.0	242.0	Inflated to reflect increase in labor and material cost.
10	Strategic Highway and Bridge Actions – CMP-based (Capacity)	17.4	11.7	3.7	5.0	Updated projects. Current budget focuses on complete streets and roundabouts.
11	Strategic Highway and Bridge Actions – Economic Development/ Community Compatibility	9.5	10.4	2.0	3.0	
12	Supplemental Goods Movement Accommodations	14.8	0.0	2.5	7.0	New estimate based on Freight Plan and discussions with the Freight Advisory Committee. Assumes allocation under the FAST Act's NHFP.
13	Supplemental Bike and Pedestrian Accommodations		5.8	3.0	7.0	Updated based on discussions with Bike/ped Advisory Committee.
14	Supplemental Access Management Actions		0.0	0.0	0.0	Incorporated into pavement preservation and reconstruction work.
15	Supplemental Safety Actions		2.6	3.0	10.0	Reflects increased focus on safety through the State's Safety Action Plan.
16	Demand Management	0.5	0.5	0.7	3.0	Supports TDM-related transit.
17	Integrated Planning and Outreach	2.6	1.0	1.5	3.0	Key aspect is development of safety management system for local roads.
Total Plan Cost		506.0	435.2	512.0	775.0	
Expected Revenue				512.0	775.0	

Notes

1. *This table groups the various New Visions 2050 actions into categories of regional programs and specific major investments to facilitate estimating financial need. Some categories include activities outside of CDTC's realm of highway and transit projects. For example, category 9 – highway and bridge maintenance and operations – captures ongoing NYSDOT and local transportation expenses excluding capital projects. Included in the category are street repair, grass mowing, snow removal, and other activities of state and local highway departments. This category is the single largest commitment of transportation resources in the region. Category 3 – transit service – includes local costs that overmatch federal resources including STOA and local mortgage tax receipts.*
2. *Two budgets were prepared. The 'reduced funding scenario' is based on recent reductions in TIP federal-aid and State Dedicated Fund (SDF) allocations to the region. The 'full funding scenario' is consistent with expectations that the support for continued governmental responsibility for transportation at the federal level will remain strong, a principle articulated in the previous New Visions Plans. The reduced funding scenario will have serious negative impact to the region's pavement and bridge infrastructure.*
3. *The approach to budgeting is policy-centered, focusing on CDTC's commitment to a wide range of initiatives without being wedded to a single, inaccurate estimate of costs and funding availability. It is dynamic in its ability to handle changes in funding while also providing a basis for any effort to increase levels of either dedicated or flexible funds. It also places appropriate attention of all elements of the plan because of their inter-relationships.*
4. *The budgets in the table maintain CDTC 'steady progress principle, even under a constrained financial future. Under constrained budgets, preserving the existing transportation system - both highway and transit -- has a higher priority than making improvements and additions. However, it is appropriate to assume some amount of highway improvement, bike accommodation, or complete street re-design will be included in CDTC 's capital program even if budgets are reduced from historic levels. Adherence to CDTC policy to make comparable progress across all improvements, steady and reasonable progress is possible at current, reduced funding levels.*
5. *All values in the table are expressed as annualized millions of dollars. Both cost and revenues are expressed in year-of-expenditure (YOE) dollars to accurately account for the anticipated revenues available to the region and the impact of inflation on the costs of materials and labor to implement projects through 2050. Data used to estimate future inflation in transportation costs was obtained from NYSDOT. NYSDOT uses tabulations from HIS Global Insight to estimate future project costs. For this effort, the annual increase in costs through 2050 is estimated to be 2.36 percent.*
6. *Because transportation revenues draw from federal, state, and local taxes and user fees as well as private developer resources, projecting revenues is a difficult and risky undertaking. Future revenues are related to not only to levels of future transportation demand and overall economic growth, but also to public policy. While there is broad support for strong continued governmental responsibility for transportation, the details concerning the relative funding responsibilities of the federal, state, and local governments are likely to be adjusted in coming years. Consequently, it is extremely difficult to project the resources that can be expected to be available for new initiatives. Even though uncertain, revenue is expected to follow historic trends consistent with estimates developed under the previous New Visions 2030 update. Additional examination of future revenue sources will be undertaken in preparation of the next long-range plan update scheduled for 2020.*
7. *On balance, it appears that the revised plan's reach is similar to the reach of New Visions 2040. CDTC can assert that the 2050 plan is fiscally balanced over time – but only if public funding increases regularly over the next 30 years as it has in the past. An essentially flat level of revenue would lead to serious, unacceptable declines in physical and service conditions, and would make even the most modest improvements difficult to accomplish.*

Step 16. New Visions Product: Earmarked TIP funds (programming process beginning in 1997)

More impressive than the nature of the New Visions long-range budget was the commitment of the CDTC members to reflect that budget in the TIP. In 1997, working with all categories of federal highway and transit funding, CDTC identified \$90 M that was available for new projects. Collectively, CDTC members assigned the funding to project in three steps. First, approximately \$50 M was earmarked to those budget categories in the New Visions plan that were under-represented by projects on the existing TIP. This directed funds primarily to bridge, pavement, transit and community compatibility categories. Congestion relief (being over-represented in the existing TIP) was assigned no new money. The second step involved selecting additional projects totaling \$30 M solely on project merit -- calculated using a revised evaluation method that included the New Visions full cost accounting and other performance measures. Finally, a small amount of funding was reserved to assign to projects identified after public review of the draft TIP.

The net result of this three-step approach and its linkage to the New Visions budget was the funding of an unprecedented number of "community compatibility" projects. These include several with a direct relationship to arterial management objectives, such as two projects to build small industrial access roads (with full access control) to move heavy trucks out of urban neighborhoods.

This approach proved successful in moving the TIP much closer to reflecting the budget distribution in the New Visions plan. The logic of the approach was so compelling that, in the most recent TIP update (for a new 2003-08 TIP), CDTC repeated the exercise. Again, project categories under-represented in the TIP were given funding earmarks out of the \$80 M available; those over-represented were given no funding. As in 1997, this approach led CDTC to add no new highway congestion relief projects. Instead, the emphasis was on infrastructure repair, ITS and bike / pedestrian projects.

Step 17. "Linkage" Planning Efforts (annual program beginning 2000)

As a result of the New Visions budget entry calling for "integrated planning and outreach", CDTC restructured its planning program to set aside a larger portion of funds for integrated transportation and land use planning at the community level. Annually now, CDTC solicits new land use and transportation integration ideas from all units of local government and private non-profit entities in the area. Approximately \$100,000 of staff time and \$300,000 of consultant assistance are earmarked to respond to local initiatives each year. This funding represents about 15% of CDTC's work program. Much like many of the other initiatives listed above, CDTC leverages its federal resources and responsibilities to engage local communities in efforts that advance both local initiatives and regional policies.

Access management, local sidewalk and bike plans, site design guidelines, cumulative development assessment, commercial revitalization in older urban areas, suburban "downtown" creation, transit oriented design "catalyst" studies and similar study efforts are examples of Linkage studies. CDTC administers consultant contracts on behalf of the community, while allowing the community to establish the broad objectives and scope of the work.

This program has been very successful. Through the use of CDTC's federal planning resources in support of Linkage studies and use of capital funds (STP), CDTC has committed to 92 local studies sponsored by 43 different entities in the past six years. In aggregate, the studies total over \$6,500,000 in land use - related planning effort, including over \$500,000 in local funds leveraged by the availability of CDTC's financial assistance. Capital funds have also been used to support this approach. The effort represents perhaps the most extensive regional-local, land use – transportation planning program in the nation.

For 2006-07, a portion of the Linkage program was reserved for applications solely for inter-municipal planning efforts. A study of land use and transportation for US 20 in Western Guilderland and Princetown was funded using the reserve.

In 2018-19 the proposed study evaluation criteria were changed by adding a new requirement to encourage municipalities which have never been awarded a study, to apply. As a result in 2020 we awarded 3 new studies to 3 villages which had never before been awarded a study.

Critical and unique aspects of the Linkage planning effort are:

- Use of the MPO to hold the consultant contract for local planning
- Influence of MPO staff on the local planning agenda and adherence of study scopes to adopted regional MPO policy
- Use of streamlined consultant selection procedures to minimize effort
- A "fair access" consultant policy which has led to use of over 20 different consultant firms
- A high level of local funding commitment (the 2020-21 Linkage program of almost \$290,000 in studies reflected a local cash contribution averaging 12% of the total budget)
- Regional planning engagement in the critical planning issues of nearly every city and nearly every growing suburb as well as those of a number of rural communities.
- Development of a set of projects for TIP consideration that reflect reasonable, measured and locally-supported plans.

Step 18. The Land Use / Market Study for the NY5 Corridor (1998-2001) and BRT Planning (2002-present)

A major accomplishment for CDTC with respect to transportation / land use integration was the completion of the NY 5 Land Use and Transportation Concepts Study in 2001. This \$250,000 CMAQ-funded study was not a traditional transportation corridor study. Rather, it drew from the full cost accounting results of the New Visions exploration of rail options for the region.

The New Visions conclusion had been that a light rail line covering the 16.5 mile NY 5 corridor between Albany and Schenectady could be justified -- if land use in the corridor could be focused and increased in scale. The study focused on two primary questions: will the market support increased activity in the corridor and, do the communities on the corridor desire intense, transit-oriented development? Through heavy public involvement and the use of visualizations and surveys, community vision was determined. In parallel, the market question was explored. The result of the study was for CDTC to adopt a \$200 M, 20-year plan for streetscaping, Bus Rapid Transit, bike and pedestrian improvements and site re-design along the corridor. Rail transit was set aside due to limited development potential of the corridor and lack of interest in corridor intensification by the communities.

By approaching the question in this manner, CDTC avoided unnecessary technical work considering a rail alternative for the corridor while simultaneously helping five municipalities form a vision for the corridor. Each of the five municipalities endorsed the land use and transportation concepts plan by resolution. Approximately \$50 M in implementation of the plan will be completed by 2010, including signal coordination, transit signal prioritization, advanced transit information systems, streetscaping, access management improvements and pavement rehab.

A BRT Design Study was conducted jointly by CDTA and CDTC in 2004-05, producing recommendations for BRT station location and service design. In 2011 the level of transit service was improved with a very successful Bus Rapid Transit (BRT) line which CDTA calls BusPlus..

Step 19. New Visions 2030 Planning Effort: A New Regional Consensus (2001 – 2005)

In October 2000, CDTC adopted its New Visions 2021 plan with full endorsement of all principles, strategies and actions from the 1997 New Visions document. Stakeholders expressed strong support for the direction taken in the 1997 plan and recommitted to its full implementation. Again in August 2004, CDTC reaffirmed the principles, strategies and actions through adoption of the New Visions 2025 plan.

While not intended to be as extensive as the original New Visions process, the 2030 exercise built from the experience gained in the region implementing the New Visions plan over the past decade. In addition, it extended CDTC's planning horizon into the uncharted territory of the second quarter of the 21st century. The detailed outline of issues being addressed in the 2030 exercise included the following headings: (1) long-range "big picture" and "big ticket" questions about the region's highway and transit systems; (2) demographics and technology; and (3) settlement patterns and local community development; and (4) budget issues.

The overwhelming cost of providing adequate freeway and arterial levels-of-service to the year 2030 using standard highway capacity approaches was a central issue to be addressed. The New Visions plan's broad principles, CDTC's history of transportation - land use integration, a heightened sense of urgency and the central role of quality of life subjects in the MPO discussions all contributed to innovation in the new plan.

Quality of life in particular has shot to the top of the regional agenda. CDTC established a Quality Region Task Force in concert with the Capital District Regional Planning Commission to address issues of regional settlement patterns and the decision-making capabilities of local government. In this effort, the Quality Region Task Force worked cooperatively with several other regional initiatives seeking to address concerns about economic health, urban revitalization, smart suburban growth and inner-city neighborhood empowerment. These initiatives include ARISE (A Regional Enterprise to Support Empowerment) which is working to establish "community audits" of workforce demand, supply and training and is encouraging CDRPC to establish a citizens' planning academy; the Center for Economic Growth which is trying to thread together an 11-county near-term regional strategy for economic growth and urban revitalization; and the Business - Higher Education Roundtable of area CEO's and university presidents which has authored white papers on land use and transportation.

CDTC's long history and well-developed policies on transportation and land use integration positioned the MPO to be a central player and primary resource to these several regional initiatives. As a result, a consensus emerged in 2003 around the following regional aspirations:

1. All regional groups reflect a belief that there is a need for some degree of economic growth in the region in order to sustain and enhance the region's quality of life. Along with nurturing heritage tourism and retaining current industry, growth in the high tech sector offers opportunities to the region for developing a local economy with a range of career-type jobs.
2. All the initiatives acknowledge the critical need for vital urban centers and seek to revitalize the region's older urban areas through economic development investment.
3. All the initiatives recognize that much of the region's growth will occur in suburban areas, and seek to have that growth help construct communities that are stronger and better than what was there before, while retaining the character of the community that brought the residents there.
4. All the initiatives seek to have growth benefit all the region's residents through adequate access to jobs, education and training.
5. Regarding transportation, all have expressed a desire to find ways to prevent serious loss of the highway mobility that is part of the region's quality of life. All have articulated a desire to use public transportation, walkable communities and alternate modes to the maximum degree feasible to assure access and travel options.

This set of aspirations resonates with public officials, environmental advocates, urban advocates, business and education leaders and the general public. At the time CDTC referred to these six points as the "regional plan".

Step 20. Coordinated Actions by Other Partners (2004- present)

With the backdrop of CDTC's explicit efforts for integration of land use and transportation, several recent activities highlight the impact of these efforts:

CDRPC's Strategic Plan (2004): The Capital District Regional Planning Commission completed a new Strategic Plan in 2004. In the plan, CDRPC acknowledges CDTC's lead role in regional land use efforts. In answer to the question, "*What is our role in the development of a regional land use development plan?*", CDRPC concluded that, "*Our primary role is as a partner with the Capital District Transportation Committee (CDTC).*"

"CDTC must maintain a long-range regional transportation plan as a guide to planning and implementation decisions. The plan must address social, economic and environmental factors and the inter-relationship of transportation and land use... We no longer have a mandate to develop a regional plan as suggested in the purpose statement for the CDRPC included in the 1967 4-County agreement."

CDTA's Transit Service Principles (2005): The Capital District Transportation Authority is currently completing a new regional Transit Development Plan. As part of the effort, CDTA has adopted a series of principles, building off of CDTC's adopted Planning and Investment Principles. Among these, CDTA embraces the CDTC transit – land use policy goals, adopting a new service policy that "*prioritizes service offerings and provides special consideration to communities that provide a transit supportive environment (land use policies, zoning considerations, park and ride arrangements, etc.)*"

Center for Economic Growth (CEG) Regional Development Compact (2005): As part of its “Regional Development Strategy”, the private sector Center for Economic Growth crafted a Regional Development Compact with its local government council in 2004. After accepting some edits from CDTC and CDRPC staff, the compact is currently being promoted to municipalities by CEG. The compact seeks municipal adoption of a commitment to comprehensive planning, transportation – land use integration, recognition of the need for vital urban centers, respect for agricultural and open space, and the need for training of planning officials. Approximately a dozen municipalities have adopted the compact as of the end of 2005.

NYS DOT's Strategies (2005): As part of its Statewide Transportation Master Plan, the New York State Department of Transportation has identified nine implementation strategies. One is “*to increase the compatibility between existing and desired land uses and transportation.*” It is expected that NYSDOT will increase its support for and engagement in CDTC's land use – transportation integration efforts as a result of its embracing this strategy. Through CDTC's initiatives, NYSDOT Region 1 is arguably already more thoroughly engaged in local land use planning than any other state DOT regional office in the nation.

Joint Fiscal Analysis of Alternative Growth and Development Scenarios (2006): Building from the alternative growth and development scenarios articulated by CDTC and CDRPC as part of the Quality Region Task Force's Working Group A effort, an augmented analysis will take place in 2006. Funded by CEG, the joint effort of CDTC, CDRPC and the State University of New York at Albany's Urban and Regional Planning Program will seek to quantify the fiscal costs (for both maintaining state of good repair and for expanding to meet new demand) for each of four growth and land use scenarios. Costs will be estimated for public safety, schools, sewer, water and communication utilities. CDTC will identify representative costs for highway and transit systems in each scenario in a manner that is consistent with adopted principles.

Hudson River Crossing Study (2008): In a cooperative partnership, CDTC and the New York State Department of Transportation (NYSDOT) initiated this study to take a broad, initial look at transportation and multi-modal mobility issues related to the Patroon Island Bridge and adjacent Hudson River crossings. Together these crossings accommodate approximately 244,000 vehicle trips each day. The study includes an examination of the entire system of crossings under several possible future growth scenarios as defined in CDTC's New Visions 2030 document. NYSDOT will use the mobility and traffic findings from this study to help frame the scope of its upcoming major rehabilitation/replacement study of the Patroon Island Bridge.

I-87/US 9 Integrated Corridor Management Study (2014): This implementation of Integrated Corridor Management (ICM) was proposed to improve the movement of people and goods in the I-87/US 9 corridor. ICM would enable the New York State Department of Transportation (NYSDOT) to optimize use of available transportation infrastructure by directing travelers to underutilized capacity in a corridor. Strategies could include motorists shifting their trip departure times, routes, or modes, and/or NYSDOT dynamically adjusting capacity on I-87 by changing metering rates at entrance ramps or adjusting traffic signal timings to accommodate demand fluctuations.

In addition, access management and smart growth strategies are proposed for the US 9 corridor. Access management is the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway.

Capital District EV Charging Station Plan (2016): CDTC and the Capital District Clean Communities (CDCC) worked as part of a team to develop an electric vehicle (EV) charging plan for the I-90 Corridor, from Albany to Buffalo. In total, four Clean Cities coalitions worked with five Metropolitan Planning Organizations (MPOs) along the corridor to develop five regional plans – Capital District, Mohawk Valley, Central New York, Genesee / Finger Lakes Region, and Western New York. Input and guidance on the plan was provided by a Working Group consisting of key stakeholders representing supporting communities, employers, and institutions.

Saratoga Regional Traffic Study (2016): The purpose of the study was to address mobility concerns in central Saratoga County, New York, focused around the Adirondack Northway (I-87) Exits 11 and 12 associated with population growth and increased development. The question of whether Exit 11A is needed after construction of two Chip Fabrication Facilities at Luther Forest Technology Campus is answered, while examining area wide safety concerns, bicycle and pedestrian needs, transit, and passenger vehicles operations. The study identifies several ways to mitigate, or reduce impacts, associated with future growth in central Saratoga County.

I-787/Hudson Waterfront Corridor Study (2018): The purpose of the study was to identify potential future transportation strategies for the Interstate 787 (I-787) corridor that support and balance economic development and revitalization efforts, transportation network resilience, and improved walking, biking, transit, and visual access to the waterfront.

I-787 is comprised of extensive and elaborate transportation infrastructure, which is costly to maintain. Although significant investment has been made recently to extend the service life of this infrastructure, the fact remains that the maintenance cycle to continue the longer-term preservation of this network of roadways and bridges in a state of good repair will continue to be a significant financial commitment for the region leading up to a point where the entire facility has reached the end of its serviceable and useful life. The development of an implementation strategy for long-term improvements will need to consider that the I-787 infrastructure will not reach this point of need all at the same time.

S. Pearl St. Heavy Vehicle Travel Pattern Study (2018): CDTC, in cooperation with the City of Albany, initiated, managed, and administered the City of Albany: S. Pearl St. Heavy Vehicle Travel Pattern Study (the “study”). The primary objectives of the City of Albany S. Pearl St. Heavy Vehicle Travel Pattern Study were: (1.) Research and analyze heavy vehicle travel patterns along S. Pearl St./NY 32 and (2.) Develop potential strategies to mitigate the negative impacts of heavy vehicles on residents of the study area.

Step 21. TIP Project Merit Score Sheet (2016)

In April 2015 CDTC staff introduced a draft of the new merit scoring criteria to be used in project evaluations for the 2016-21 Transportation Improvement Program (TIP) update. The objectives of the new merit scoring criteria included:

- Providing a direct link between our New Visions 2040 principles, recommendations, and funding priorities and our TIP project selection so that project selection directly reflects the New Visions priorities, as required.
- Providing an easily adjustable evaluation system for when New Visions priorities change.
- Quantifying the non-quantifiable project benefits.
- Quantifying benefits that are not included in the benefit/cost (B/C) ratio calculation.

- Providing an explicit, transparent, easily understood and complete evaluation system that better reflects the project value.
- Replacing the use of “filters” and “networks” that were not easily understood in project evaluations and potentially biased the process against rural projects.
- Augmenting, not replacing, the project B/C ratio.
- Providing incentives for sponsors to include beneficial project features in project scopes.

In the following months, staff worked diligently to address the Planning Committee’s and the Policy Committee’s comments, and to produce the definitions or criteria for each of the numerical values in the proposed merit scoresheet.

Staff also tested the new evaluation system on a representative sample of 15 projects from our previous TIP project solicitations. Staff compared like projects with other like projects, i.e. pavement preservation projects with other pavement preservation projects; and assumed that the maximum merit score for each project would be 67 points and the maximum B/C ratio would be 33 points for a total project score of 100 points.

At several Planning Committee meetings, members had discussed several options for changing the weight given the merit score and the B/C ratio, including assigning them the same weight (50 points each) and assigning the B/C ratio more points than the merit score. In conclusion it was decided that each score (B/C ratio and merit score) would be assigned the same weight of 50 points each.

At the March 2016 Planning Committee meeting, members thought that the merit scores were reasonable and fair, were satisfied with the project evaluations (B/C ratios and merit scores) and used these evaluations to program 41 new projects in the 2016-21 TIP. Copies of all the documents referred to in the above paragraphs can be found on the CDTC website as part of the appropriate Planning Committee meeting’s materials.

Since then only a Performance Measures category has been added to the scoresheet.

Step 22. New Advisory Committees (2013 - present)

Since 2013 CDTC has created several new Advisory Committees consisting of member representatives, and stakeholders, and advocates from the private sector. These committees were meant to increase participation in the MPO process, to inform these committee members of the MPO process, and to provide advice from subject matter specialists to the staff, the Planning Committee members, and the Policy Board members.

There are now 6 Advisory Committees, one for Bike/Pedestrian, Complete Streets, Equity, Freight, Human Services Transportation, and Regional Operations and Safety. These committees “advise” staff, the Planning Committee, and the Policy Board on their specific program issues and provide input on the development of our New Visions long-range plan, TIP projects, UPWP tasks, studies, etc.

These committees meet monthly, bi-monthly, or quarterly and consist of between 10 – 25 members. The interest in these committee memberships is always high, we always receive valuable input from these committees, and the conversations between committee members, staff, etc. have been very beneficial to all involved.

Step 23. Local Bridge Preservation Study (2015 - present)

CDTC commissioned this study of the region's locally owned bridges in order to identify candidates that could benefit from timely preservation strategies. This report chronicles the methods and results from the review of 389 locally owned bridges in Albany, Rensselaer, Saratoga, and Schenectady Counties.

There are 389 bridges within the CDTC's jurisdiction that are owned and maintained by local municipalities (counties, cities, towns, and villages). According to 2013 NYSDOT Bridge Inspection Reports, approximately 215 of the 389 locally-owned bridges are either structurally deficient (92) or functionally obsolete (123). The Federal Highway Administration (FHWA) considers bridges to be structurally deficient if significant load carrying elements are found to be in poor or worse condition due to deterioration, or the bridge has inadequate load carrying capacity. A bridge which does not meet current standards for managing traffic volume is considered functionally obsolete.

In November 2013, CDTC formed a Bridge Working Group to discuss various issues related to bridge preservation for Transportation Improvement Program (TIP) programming. The group's purpose is to help identify long term bridge replacement and preservation needs and costs for the update of CDTC's New Visions plan. A key function of the group is to address Planning Committee member concerns which have been raised by the change in federal and state strategies regarding bridge infrastructure. In August 2014, CDTC contracted with an engineering consultant to assist in the evaluation of the region's locally owned bridges and to develop work strategies for selected bridges. This evaluation is intended to help CDTC develop a strategic approach to managing infrastructure work for locally owned bridges in its planning area.

The information was used by local sponsors to develop their own bridge management plans and to apply for funding from the BRIDGENY program.

Step 24. New Emphasis on Title VI, Americans with Disabilities (ADA), etc. (2018 - present)

CDTC initiated new Title VI and Americans with Disabilities Act (ADA) program, including work on the following tasks:

Established an ADA Working Group, which meets 2 -3 times annually.

Staff completed the assembling and dissemination of the local government data packages containing results of CDTC's Pedestrian Facility Presence/Absence Inventory of sidewalks. All towns, villages, and cities in CDTC's planning area have received a package. The sidewalk inventory GIS files, data tables and maps can be used by municipalities as a first step in identifying ADA compliance needs for their pedestrian facilities to update or establish required municipal ADA Transition Plans. Many of the municipal members of the ADA Working Group have begun developing ADA Transition Plans.

Staff completed a draft of an ADA Self-Analysis for CDTC, coordinated with the property owner, and advised the Policy Board in September that it will be provided to the Planning Committee in October for approval.

The FHWA Division Office Civil Rights Specialist presented about municipal Transition Plans to the Policy Board at its September meeting.

Staff attended the kick-off meeting for a project undertaken by Cornell University's Yang-Tan Institute on Employment and Disability to create a Transit Research & Accessibility Center, which was funded by a New York State Developmental Disabilities Planning Council grant. The project will also develop an online training curriculum about both ADA requirements related to fixed-route transit as well as instructions on using the app to be developed. The next meeting was expected to be in summer 2018 and will seek to include app testing teams.

CDTC began to experiment with live-streaming public meetings to its Facebook page. That page maintains an archive of the videos for an I-787/Hudson Waterfront Corridor Study public meeting as well as a meeting for a local land use and transportation linkage study, the Washington Avenue - Patroon Creek Corridor Study.

CDTC and the Regional Transportation Coordination Committee held a free Workshop for Senior and Disabilities Services Transportation Providers in May to share information on driver recruitment and retention, volunteer driver programs, and grant sources.

Staff attended and presented at a board meeting of the Albany Guardian Society, which approved funding to layout and print a Senior Transportation Guide. CDTC staff compiled information about senior transportation providers, and transmitted it to the Guardian Society, which will lay the information out into a guide format and print.

Staff updated the website with ADA Transition Plan reference materials and materials from ADA Working Group meetings.

As part of the Transportation Improvement Plan update over the winter, CDTC again utilized its Merit Evaluation Process as part of the rating and ranking of projects. This process includes both positive and negative points on the topics of Environmental Justice and Americans with Disabilities Act. It also considers impacts on pedestrian, bicycling, and transit networks.

Staff updated the Long Range Transportation Plan, New Visions. As part of this effort, staff created census tract-level regional maps for all program managers to help them consider opportunities and potential negative impacts of their programs on certain populations. The maps show the relative concentrations of households without a personal vehicle and/or no internet access; people over 5 who speak English less than very well; and people who are over 65, under 18, have a disability, are minority, and/or have income below the poverty level.

At a staff meeting in December 2018, staff viewed and discussed the FHWA's Federal Aid essentials ADA training videos titled "Overview of FHWA's Civil Rights Program Requirements for Local Public Agencies" and "Requirements for Resurfacing Projects". All staff responsible for planning products participated, 12 staff total. At a staff meeting on February 12, 2019, staff viewed and discussed the Access Board's videos entitled "Accessible Sidewalks: Design Issues for Pedestrians with Ambulatory Impairments" and "Accessible Sidewalks: Design Issues for Pedestrians Who Are Blind." Eleven staff members participated.

CDTC updated its "Administrative Procedures for the CDTC Staff" to include a new section on harassment in the workplace, add a new harassment complaint procedure, and update its discrimination complaint procedure.

Step 25. Expanded Equity Program (2018 - present)

CDTC initiated new Equity program, work on the following tasks:

Staff held bimonthly meetings with the Equity Advisory Committee. A goal of the Task Force is to ensure CDTC's conformance with Title VI and Environmental Justice. At the group's direction, staff began to create a "Transportation and Poverty" analysis modeled after a report completed in Monroe County. The Advisory Committee met with the UAlbany Science & Technology Entry Program to discuss the truck traffic routing study and to learn from the students about their work on a living green wall that could be located on South Pearl Street..

Following up on the Ladders of Opportunity emphasis area, the Equity Task Force distributed a transportation gaps survey to over 100 people involved with health, juvenile justice, local government, and community organizing. As of August 10th 2017, 57 people had completed the survey, with 21 expressing interest to participate in focus group style discussion to delve deeper into transportation issues and opportunities. Staff began organizing for focus groups with transportation system users.

Staff met with community leaders concerned about truck traffic on South Pearl Street in the City of Albany. As a result of these discussions, CDTC engaged FES Installations to install license plate readers at six locations in an area bounded on the north by the intersection of Green Street and 4th Avenue, on the west by South Pearl Street, on the south by the intersection of Corning Hill Road (NY 32) and River Road (NY 144), and on the east by Smith Boulevard and Church Street in the Port of Albany. Staff developed a methodology for data collection, and worked with study partners including the City of Albany, DEC, and NYSDOT, to begin execution of the project. Using one week of 24-hour data from the cameras as well as license registration information, we will determine the heavy vehicle travel patterns through the area. This will enable local partners to work with heavy vehicle traffic generators to seek alternate routes. Staff presented on this project at the "Environmental Justice Considerations" session at the biennial NYSAMPO conference in Syracuse. The study of truck traffic routing on South Pearl Street was completed. Staff presented the results at a public meeting at the Ezra Prentice Homes in Albany, and released the final report for a 30-day public comment period. The state's DEC continues to use the data from CDTC's study in its work in the vicinity of South Pearl Street.

Staff wrote and released a "Moderated Focus Groups" RFP to conduct focus groups, and the Equity Task Force selected a consulting firm, which conducted eleven focus groups delving into transportation issues and opportunities for traditionally underserved populations. The consultant for the "Moderated Focus Groups: Experiences of Micro-Navigation in New York State's Capital Region" provided the [final report](#). Staff wrote an executive summary for the project, and the Equity Advisory Committee created action items to help fill some of the underscored gaps. Those were communicated directly to CDTA and two municipalities.

Step 26. Regional Plans (2016 - present)

Completed new Regional Plans and updated existing plans. Created a new Regional Freight Plan, Local Roads Safety Action Plan, and Local Bridge Preservation Plan. Completed major updates of our Human Services Transportation Plan, our Regional Trails Plan, and our Congestion Management Plan.

The Regional Freight Plan was a staff and consultant effort which involved local freight experts and stakeholders from all modes (air, rail, marine, and trucking) and from the private sector and major local universities. Using existing and new sources of freight data, it developed a local freight network and recommendations to improve goods movement in our area.

The Local Roads Safety Action Plan was our first “safety plan” and probably the first local plan in New York State. It examined crash data on local roads and developed locally-specific strategies to decrease crashes.

The Local Bridge Preservation Plan was a staff and consultant effort which examined the bridge reports for almost 400 local bridges, and developed repair strategies and costs for each bridge. This information was then used by the bridge owner to apply for funding to complete the necessary repairs.

The Human Services Transportation Plan was a staff effort which brought hundreds of public and private sector providers together, to develop methods to better coordinate their efforts. Staff also reached out and received valuable input from the many users of these services.

Our Regional Trails Plan was a major update of our 2007 plan. This staff and consultant effort documented the regional demand for more trails and the progress made since our last plan; surveyed users, businesses, and neighbors of our trails; and estimated the benefits of our trail system. It also recommended new trails and connections and ranked these recommendations.

Our Congestion Management Plan was also a major update of our 2007 plan. This plan took a fresh new approach to traffic congestion in our area, and developed reasonable and feasible strategies to address congestion. Because our Regional Operations and Safety Advisory Committee was very active in the development of this plan, it also developed a regional consensus on how to address these issues.

See the CDTC [website](#) for more information about these regional plans.

Step 27. Complete Streets Program and Training (2013 - present)

CDTC established the Complete Streets Advisory Committee in 2013 to research, learn, and share information with the Planning Committee, Policy Board, and other stakeholders on complete streets tools and techniques that could be integrated into plans and roadway projects. Fostering improved communication between municipal and project planners and designers continues as a major goal.

Staff organizes Complete Streets Advisory Committee meetings and carry out efforts as directed by the Advisory Committee, including the following:

- Encourage municipalities to adopt and implement Complete Streets policies.
- Develop Complete Streets Design and Implementation Guidelines appropriate for the Capital Region.
- Continue implementation of a complete streets tracking and performance measurement process focused on TIP project outcomes. At each Planning Committee meeting, project sponsors report back on the progress of projects on the TIP.
- Request TIP project presentations at the Advisory Committee meetings.

- Continue to provide staff and consultant resources for the Complete Streets Educational & Technical Assistance Workshops:

The workshops help our transportation planning practitioners and decision makers identify and overcome Complete Streets policy and implementation barriers. These free consultant-led workshops are highly interactive in nature, with the goal of building local capacity to implement Complete Streets approaches, and strengthening relationships between transportation practitioners, other departments, and the community. Key decision makers, stakeholders, and agency professionals learn how to more effectively balance the needs of all users and routinely create and maintain Complete Streets. The workshops are available to local governments through a competitive application process.

CDTC also provides National Association of City Transportation Officials (NACTO) training to local transportation leaders and professionals on roadway design that prioritizes alternative modes, such as bicycles, pedestrians, and transit via certified trainers. The workshops are typically a day-long event that includes a morning seminar and afternoon design charrette. CDTC will plan, coordinate, and host one training for CDTC members.

Step 28. Climate Change Initiative (2016 - present)

CDTC uses the new EPA MOVES model to develop estimates and forecasts of emissions of pollutants that affect air quality (volatile organic compounds and nitrogen oxides) as well estimates and forecasts of greenhouse gas emissions that contribute to global warming. CDTC will also evaluate the energy impacts of transportation plans and programs.

Staff collaborates with CDRPC, NYSDOT, NYSDEC and NYSERDA, to advance the transportation and land use elements of the Regional Sustainability Plan by promoting smart growth, electric vehicles, and other transportation and land use GHG emissions reductions options.

Staff develops strategies and policies for communities to support the deployment of electric vehicles, as part of Linkage recommendations (e.g. streetscape improvements should include EV charging or EV-ready infrastructure). Staff collaborates with resource and infrastructure agencies such as the Environmental Facilities Corporation, NYSDEC and CDRPC to integrate information on best practices related to green infrastructure, low impact development, transfer of development rights/open space preservation and sustainability in land use/transportation planning activities.

Staff monitors availability of GIS mapping and other data resources on regional environmental features derived from federal and state agencies and other secondary sources.

Staff utilizes the revised TIP Project Justification Package to compare candidate projects against locations of potentially sensitive environmental features and cultural resources.

Staff will partner with CDRPC and NYSERDA, providing information on VMT and greenhouse gas emissions for communities on an as requested basis.

CDTC staff participated in a NYSERDA Study to examine the role of scenario planning in understanding the potential for reducing greenhouse gas emissions. The Study utilized a metropolitan planning tool known as Rapid Policy

Analysis Tool (RPAT), which was developed by Resource Systems Group (RSG) under contract with FHWA. RPAT is multi-sectored tool, incorporating technology (e.g. fuel efficiency standards), transportation supply (conventional highway, transit and bike/pedestrian facilities), land use, and household behavior. RPAT facilitates the comparison of “what if” scenarios and, when successfully deployed, can help to set policies for long range Climate Action Plans. The goal is to then use the calibrated model to run up to five policy sets to determine the most effective means for reducing transportation GHGs.

The U.S. Department of Energy’s Clean Cities Program is a voluntary, locally-based government and industry partnership. It is designed to advance the national economic and energy security of the nation by supporting local decisions to reduce use of petroleum fuels in vehicles. Clean Cities carries out this mission through a network of nearly 100 volunteer coalitions which develop public/private partnerships to promote alternative fuels and vehicles, fuel blends fuel economy, hybrid vehicles, and idle reduction. Capital District Clean Communities was formed in 1999 to take advantage of the environmental, public health, energy, and economic benefits that the program offers. In early 2001 CDTC agreed to assume the lead role in managing the program previously provided by Schenectady County. CDTC in its 17th year leading the coalition here in the Capital District and is currently the only MPO in New York to directly host a Clean Cities coalition.

Step 29. CDTC Performance Measures (2018 - present)

The CDTC New Visions Plan has always used some form of performance indicators to describe the goals of individual program areas and potential outcomes of the Plan. As part of the New Visions 2040 update process, CDTC bolstered their commitment to performance based planning and programming in response to the Fixing America’s Surface Transportation (FAST) Act, which requires Metropolitan Planning Organizations (MPOs) to use a transportation performance management approach in carrying out their federally-required planning and programming activities. CDTC developed a comprehensive list of objectives and corresponding performance measures for each New Visions program area, identifying over 50 individual metrics to measure the performance of the New Visions Plan. The identified New Visions performance measures are integrated into TIP project selection, project development, linkage studies and various other areas of CDTC activities. The identified performance measures are key metrics that represent the performance of each program area. Each program area can be traced back to the 13 New Visions Planning and Investment principals that guide CDTC’s planning process. Improving conditions of New Visions performance measures indicate the adherence to the planning and investment principals and progress towards New Visions 2050 goals

Step 30. Joint CDTC/CDRPC Technical Assistance Program (2018 - present)

The Community Planning Technical Assistance Program is jointly managed by CDTC and CDRPC and is intended to offer staff time and expertise to local governments undertaking small scale community planning initiatives. Proposed initiatives are selected through an annual solicitation and must be small in scale and scope, result in a defined product, and in some way relate to the principles of CDTC’s regional transportation plan.

The types of projects eligible for this program include:

- Guidance on comprehensive/neighborhood planning and zoning
- Data collection and analysis
- Research into a planning issue
- Public input

- Community visioning, surveys and mapping
- Transportation safety and operations planning such as:
 - o Crash data analysis
 - o Road safety assessments
 - o Traffic signal operational analysis
 - o Intersection analysis
 - o Before and after studies of capital projects
 - o Recommendation and scoping of ITS strategies.

Step 31. Simplified Long-Range Regional Planning (2019 - present)

Simplified New Visions 2050 by replacing 25 planning principles, 10 strategies, 43 actions and a 17-element budget plan with 15 planning principles and 150 recommendations and strategies.

The format of this new New Visions 2050 has been changed significantly in order to make it more readable for our readers. The discussion of the above programs is summarized, and the details which were part of the New Visions 2040 document are found in the preceding appendices. The result is a document which we think focuses the reader on the critical considerations and recommendations of each program, and which is about 66% smaller than New Visions 2040.

At the same time major improvements to New Visions 2050 include more detailed discussions of Transportation Mobility, Equity, Congestion Management, and Public Participation. Each of these programs now play a more important role in the transportation planning process.

Step 32. Local Traffic Signal Timing Program (2019 - present)

Traffic signal retiming is a low-cost method of improving safety and operations at signalized intersections. Retiming is also an effective means of reducing fuel consumption and associated emissions. Retiming is also important for pedestrian safety, as safe crossing intervals may not be present at many intersections. According to the FHWA Traffic Signal Timing Manual, the benefit-cost ratio of traffic signal retiming may be greater than 40:1 due to the low cost of implementation.

CDTC will create a formal Regional Traffic Signal Timing Program with the following scope:

- Work with local public agencies to conduct a region-wide screening of signalized intersections to identify those with the greatest potential for timing improvements.
- Analyze travel time data, conduct field visits, and identify developments that may impact local travel demand.
- Select signals to retime via an open-solicitation competitive process.
- Hire a traffic engineering firm to conduct turning movement counts, develop optimized timings, and field-implement the timing directives. The consultant amount is \$110,000 over two years.
- Conduct before-and-after studies to quantify the benefit of the retiming.
- Establishing a proactive monitoring system, through which signals with recent changes in travel demand can be flagged for retiming.

CONCLUSIONS

In an incremental nature over more than three decades, the Capital District Transportation Committee has built upon previous achievements to entertain new ideas. Many of these achievements and ideas have focused on the objective of integrating land use and transportation decisions. Each initiative has reinforced CDTC's stature in the community and increased its opportunity to influence the outcome of community-shaping events.

Today, CDTC is a Metropolitan Planning Organization enjoying a high degree of respect and trust in the eyes of its members and the public at large. It has achieved this stature as a result of a central feature of its initiatives; that is, all initiatives have at their core the desire to use the MPO process to help build stronger communities. It is through this approach that transportation system objectives such as travel demand, ITS, access management, and public-private financing have gained acceptance in the Capital District. None of the initiatives have been perceived as policies that were being imposed upon local governments.

Certainly, measured against an ideal yardstick of impact on the majority of land use decisions or the provision of access control on every arterial, CDTC's successes have been modest. Not all communities or developers have bought in to the concepts advocated through CDTC's process. But perhaps the greatest significance of CDTC's initiatives is that there has been measurable success of the MPO working solely with the tools of good will, technical ability and the leverage of federal transportation law. The region's planning agenda, economic development agenda and transit and highway capital program all reflect this success. No state growth management policy, no local compact has forced compliance. Viewed from this perspective, CDTC's initiatives hold promise for any MPO in the nation that can replicate CDTC's incremental success in building trust and credibility.

Exploring the Future

Historical Perspective

Metropolitan transportation planning was established as a distinct discipline nationwide through the impact of the major urban transportation studies of the 1950's. The use of high speed computers and comprehensive systems analysis was innovative and ground-breaking. For the first time, whole highway and transit system plans could be evaluated as a unit, rather than in individual elements. Objectivity was instilled in the process by a commitment to find the "best" plan in terms of minimizing total system costs – the sum of annualized construction, operation and user costs, including the value of travelers' time.

By the time that Congress mandated the "3C" process --- continuing, comprehensive and cooperative – with the federal Highway act of 1962, the discipline was fairly standardized. Each metro area in the US received pretty much the same treatment as every other area, involving detailed land use and census data gathering, aggregation of travel data by "traffic analysis zone", creation of computerized highway (and sometimes, transit) networks of nodes and links, and forecasts of future (20 or 25-year) demographics and travel demand. A myriad of network options portrayed as abstract links and nodes was evaluated to find the best combination of new or improved facilities to minimize total system costs.

The first CDTC plan was developed in this manner, with a Major Highway Plan outlined in 1969 and a full plan adopted in 1971. It included recommendations to complete the then-active set of highway projects (ranging from the "free" I-90 through Rensselaer County to I-687 connecting Exit 5 on I-90 to I-87 and the Albany County Airport. It also called for substantial additions to the highway system and the construction of a number of park-and-ride lots in an effort to double transit use.

In sum, the plan called for nearly \$400 M of new or expanded facilities (about \$3 B in today's dollars) to provide a system that minimized total system costs for 1990.

Unfortunately, the ink was not even dry on these plans when the assumptions underlying the plans were proven wrong.

- The environmental movement (embodied in the National Environmental Policy Act of 1969) raised the status of environmental impacts as factors that not only alter the design details of a project but very well may lead to its cancellation.
- Funding for implementation of presumably cost-efficient transportation systems fell drastically short of expectations.
- Errors in the forecasts of "external" factors such as population growth and land use change revealed serious flaws in the planners' assumptions that future travel demand could be precisely predicted and planned for to the "nth" degree.

CDTC quickly acknowledged the failure of these assumptions and modified its regional plans by 1980. As outlined in Chapter 7, the CDTC process puts a heavy emphasis on strong policy development at the regional level coupled with problem solving integrated with local land use planning.

Surprisingly, a 2009 USGAO report reflects the transportation planning discipline's continued belief that past planning failures are primarily due to lack of effort (not to poor assumptions and a misplaced focus on computer models). GAO's two most important recommendations buy into this notion:

"The quality of MPOs' computerized travel demand models and the data used to support the process is often insufficient or unreliable. As planning organizations, one of the important functions of MPOs is the ability to forecast and analyze an increasingly complex and growing set of environmental, transportation, and social trends. Thus if MPOs are not able to keep pace with the increasing complexity of this task, their contribution to transportation planning may be compromised. However, on a cautionary note, effective forecasting requires both quality computer models and accurate data, such that investing in one without improving the other may waste resources. DOT's July 2009 18-month extension proposal calls for additional resources for the collection and analysis of data on transportation goals to help build transportation planning capacity. Adopting TRB's [Transportation Research Board's] modeling and data gathering recommendations is an example of how the additional resources could be invested.

"Finally, because the oversight mechanisms for MPOs are focused on process, rather than outcomes, it is unclear what impact regional transportation planning is having on transportation outcomes. Despite over 30 years of a federally mandated and funded transportation planning process and billions spent on roads, bridges, and transit projects, there is not enough information for policymakers to determine whether the planning process is addressing critical transportation challenges facing the United States. However, shifting to a more performance-based oversight approach will require legislative changes."

Excerpt from the congressionally-requested US Government Accountability Office report, "METROPOLITAN PLANNING ORGANIZATIONS: Options Exist to Enhance Transportation Planning Capacity and Increase Federal Oversight", USGAO, September 2009.

The Errors of Previous Projections

Essentially, the planners in the 1960's followed a simple philosophy: "What changes we see occurring today we expect to continue for the next 30 years. What is not obvious we will assume will not change." At its heart, this philosophy of trend projections cannot be criticized. For the Capital District of New York, many things are unchanged. The Hudson is still in the same location it was in 1965. Albany is still the state capital. General Electric is still building turbines in Schenectady. Saratoga County has seen a lot of growth. All of these statements were accurately anticipated from the simple planning philosophy stated above.

While the planning philosophy is reasonably sound, the application of it to factors influencing travel in the 1990's was not. The failure can be found in the superficial nature of the planners' examination of their underlying assumptions. Planners did not explore beneath the surface of what was obvious. Had they done so, they might have uncovered additional factors that proved to have a major impact on society and transportation. A brief outline of correct and incorrect assumptions about stability and change highlights the weakness of the application.

Reasonably correct assumptions

Continued population growth.
Suburban orientation of much of new development.
Continued stability of personal mode choice being based on time, out-of-pocket cost and convenience.
Stability in average trip length (in time) of personal trips.
Low gasoline prices in the 1990's.
Household income growth, leading to greater vehicle ownership and trip making.

Factors totally misunderstood or missed entirely

Increased prevalence of one and two-person households and single-parent households.
Increased participation of teenagers in the labor force.
Increased participation of adult women in the labor force and the effect of two-worker households on travel.
Two severe shocks to the gasoline supply (1973-74 and 1979-80)
Effects of vehicle technology on travel dynamics (higher speeds at higher vehicle densities).
Severe curtailment of the traditional manufacturing base.
The relative shift of population to the southern and western sections of the US from the North (dampening local population growth rates)
Globalization of the economy, US international military dominance and collapse of European communism
Growth of the computer industry and its effects on the economy and national settlement patterns.
Collapse of downtown business districts as regional retail centers.
Emergence of road rage, aggressive driving and other reactions to congestion and time constraints.
Noticeable public support in many metro areas for high cost rail transit systems.
Lack of support for significant increases in highway funding, even during periods of economic expansion.
The environmental movement, extent of environmental regulations and NIMBY attitudes
Negative reaction to the urban renewal and urban highway construction of the 1950's and 1960's and efforts to undo their effects.
Lack of public support for completion of the next generation of freeways after the Interstate system
The ability to charge developers for traffic impacts under certain circumstances.
The dominance of suburb to suburb (rather than suburb-to-city) commutation on metropolitan travel patterns.
The emergence of e-commerce, cell phones, telecommuting and other technological advances.

This brief list indicates that the shortcomings of the transportation planning exercises of the 1960's lie in the limited exploration by the planners of changes that were occurring before the planners' eyes, but were not treated in

the planning process. In the Capital Region of New York, Colonie Center and other regional malls were well established by the late 1960's and the fragility of downtown business areas was well understood, but these phenomena were not fully captured in forecasts. Similarly, the environmental movement was gaining momentum before the Capital District's metropolitan planning process was even established but was not considered seriously in forecasts. A more careful examination of current happenings could have led planners to get a better -- although never perfect -- handle on the travel dynamics of the 1990's.

The fault for the limited examination of travel factors at the time may be placed at the feet of those who in good faith institutionalized and standardized the transportation planning process at the time. The "four-step" forecasting process and a new generation of computers allowed planners in every metro area in the nation in the 1960's to test the effectiveness of a wide range of (usually highway) facilities against future demand. Unintentionally, the capability of testing scores of alternative *system* designs led planners to severely constrain the range of future *demand* conditions, typically to a single set, in order to manage the testing process.

Limiting the range of alternative assumptions about the economy, travel behavior and land use to a single, simple set had the effect of excluding any real examination of the dynamics of change occurring in these factors. *This flawed approach remains central to metropolitan transportation planning across the nation, as reflected in the USGAO's 2009 report (see above sidebar).*

The planners' desire to evaluate scores of alternatives similarly led to a restriction in the criteria used to evaluate performance -- limited generally to user costs, crash costs, time costs and construction costs alone.

The unfortunate result was a significant overemphasis in resulting plans on large-scale construction of highway facilities that later proved to be unaffordable, undoable and generally unwanted by the community. In the Capital District, very few of the new ideas included in the first generation regional transportation plan (largely the major highways plan of 1969) have been pursued seriously, much less implemented. The major projects which have been undertaken in the past 30 years have been largely those which could be described as "pipeline" projects -- projects that were in various stages of implementation -- prior to 1969.¹⁸

Even later forecasts have proven to have hit-or-miss successes. David T. Hartgen, in the New York State Department of Transportation's (NYSDOT) Preliminary Research Report 185, "What Will Happen to Travel in the Next 20 Years?", was on target for some items and off the mark on others.

¹⁸ This is not to say that planners' handle on changing events improved noticeably in the 1970's and 1980's. The Capital District Transportation Committee's second-generation regional transportation plan adopted in 1981 reflected the severely constrained fiscal environment of the day by formally discouraging "big thinking", embracing a "what we have is all that we'll ever have" mentality. This approach was practical but missed the shift in public attitude that increased discretionary funding for at least some big projects in the 1990's. Similarly, planners' forecasts of energy costs in the early 1980's assumed that costs would continue to skyrocket; forecasts of \$12 per gallon gasoline by 2000 were included in some studies at the time.

"Factors Influencing Travel, 1980-2000"
David T. Hartgen, NYSDOT PRR 185, August 1980

Factor	Forecast Change	Right or Wrong in Hindsight?
Car efficiency	80% gain performance	generally correct, although much of gain was exchanged for higher
Gasoline price	Double in real terms	wrong; dropped 25% in real terms
NY State Population	8% growth	slightly high (6%)
Overall travel increase	45%	slightly low (60%)
Gasoline usage	decline 10 to 20%	wrong; virtually no reduction
Energy shutoffs	periodic shortfalls	wrong
Inflation	8-12% avg. thru '95	wrong; 3-4% avg.
Women in work force	modest increase	correct
Unemployment	Higher than historic	wrong
No. of households	steady growth	correct
Urban patterns	increasing ruralization	correct
Auto ownership	increasing saturation, use	correct

How Can We Avoid Repeating Past Mistakes?: Rules of Thumb

It is simply not possible to avoid mistakes in forecasting conditions 30 years out. It is not the purpose of this chapter to attempt to make such forecasts. It is possible, however, to get a better handle on possible future conditions and on acceptable transportation system responses by paying close attention to the two statements above. The planning process, if it focuses its data gathering and technical evaluation on these two statements, can drive wise decisions on the use of scarce resources and better achieve long-range societal goals.

This chapter provides CDTC's desire to articulate a disciplined logic with which to approach the task of both forecasting future conditions and articulating public policy choices.

There are two statements that can help guide work on 30-year forecasts of future conditions affecting travel demand and supply. They are:

- 1. Most aspects of travel supply and demand relationships will be stable over the thirty year period.**
- 2. A few aspects of travel supply and demand will experience fundamental paradigm shifts that will change the relationships.**

Paradigm shifts were a favorite topic of Tom Larson when he served as FHWA administrator in the early 1990's. Essentially, he stressed that paradigms:

- are models or patterns through which to interpret and process facts;
- provide sets of rules that allow conclusions and point to action;

- influence our interpretation and even recognition of data;
- are necessary;
- but bias our judgment despite best attempts at openness and objectivity.

Today, we can look back to the 1960's and understand that the factors adequately anticipated in the planners' predictions of the 1990's (the "reasonably correct assumptions" above) were those than fit statement #1. Those phenomena which were misunderstood or missed entirely are explained by statement #2 -- those which were subject to paradigm shifts that changed the relationships. For example, there is no way in which to explain the shift (decline) that occurred between the 1950's and 1990's regarding societal acceptance of major highway system expansion other than as a paradigm shift.

While we cannot fully anticipate all paradigm shifts, we may be able to structure our approach to the consideration of upcoming change. To help with this discipline, two useful corollary statements can be developed by revising the two statements above.

1. **Travel supply and demand relationships will be stable over the thirty-year period when understood at a core level.**
2. **Fundamental paradigm shifts that change travel relationships can be explained by other stable relationships.**

To illustrate the meaning of these corollary statements, consider a simple example. In the 1950's, one could state that *"The car that dominates automobile sales is the full-size Chevrolet. In a rare year, Ford may edge Chevrolet out."* This statement was true for decades. Today, the most popular car in annual sales is typically the Honda Accord, Toyota Camry or Ford Taurus. But by far, the highest selling vehicle model is Ford's full-sized pickup truck.

At first glance, this represents a striking paradigm shift -- away from traditional American auto models to foreign brands and light trucks. But if the phenomena of the 1950's could have been stated at a level closer to the *core* of the relationship, the statement would be as true in the 1990's as it was in the 1950's. Such a statement might have been, *"Sales of new vehicles for private use are greatly influenced by the characteristics of affordability, value, public acceptance and accessibility to sales and service. Firms that convey such characteristics to the consumer public through advertising, extensive dealer networks, reliability and word-of-mouth will continue to see their models near the top of annual sales lists."* This stable relationship explains the apparent paradigm shift away from the "truism" of Ford and Chevy dominance.

Parallels in the field of travel demand forecasting are many. For example, household travel behavior appears to have changed dramatically since the 1960's. But examined at a core level, households' responses to travel needs have changed very little. What has changed is household income, family structure, the number of household members in the work force, settlement patterns and the cost and availability of transportation options. After completing its household travel survey in 1983, the Capital District Transportation Committee compared travel behavior in 1965 with that of 1983. On the surface, average household trip making had increased by 30%. However, when the effects of household size, number of workers, income and vehicle ownership were removed, underlying behavior had changed by only 4% over 18 years. Thus it was more the superficial paradigms and relationships that had changed, but the core relationships proved durable.

In the same manner, goods movement appears to have changed dramatically over the past 30 years, with much greater dependence today upon air cargo and next-day truck delivery. Examined more carefully, however, the increase in freight activity and shift in modes merely reflects changes in technology and economic considerations. The fundamental paradigm remains intact: goods movement is derived from the form and scale of the economy, and modes and firms prosper to the extent that they balance time, cost and reliability to meet the shipper's needs.

Thus, it is likely that over the next 30 years many superficial paradigms (for example, the Institute of Transportation Engineers' (ITE) empirical estimates of likely vehicle trips generated at single family detached homes) will change dramatically while underlying travel behavior and choice change little. The challenge is to accurately articulate the stable relationships to set the stage for exploring the societal factors that will affect the more superficial relationships.

The following statements are posited as stable relationships that can be reasonably assumed will remain stable over the next 20 to 30 years. These statements (for the purposes of planning: "truths") are formulated around relationships closer to the core level than planners tend to operate. These statements should be adequate to accommodate and even anticipate social and behavioral changes, and therefore assist in getting a handle on 2030 conditions. These "truths" are those which appear to be supported by data over a long period of time. By forming predictions of future conditions and of the effectiveness of future transportation responses from the basis of these "truths", planners today can avoid many of the pitfalls that befell their 1960's colleagues by reducing the effect of unanticipated paradigm shifts.

Here are a little more than a dozen "truths" to undergird the 30-year travel demand forecasting and travel supply planning processes. These "truths" are intended to describe paradigms that are close to the core -- in other words, paradigms that are unlikely to change in the next 30 years.

1. **Travel demand can be understood best through an understanding of the necessary and discretionary activities of individuals and requirements of businesses.** Travel is a derived need and occurs solely to accomplish other goals -- holding a job, obtaining medical care, going to school or church, etc. An individual will be generally willing to defer or eliminate any particular trip if the goal for that trip changes ("Let's eat in tonight.") or if it becomes more attractive to achieve the goal in other ways ("I'll order the new slacks on the Internet rather than going to the mall.") Commercial travel is directly related to the nature of the global economy, location of manufacturing, forms of distribution and levels of consumerism. It too is a derived activity. Even pleasure driving achieves a recreational and relaxational goal. The amount of pleasure driving will be influenced by the amount of time and financial resources allotted to recreation and by the available alternative recreational activities.

Careful exploration of possible societal changes -- immigration, aging of the population, family activity patterns, recreational opportunities, single parent households, shared stay-at-home parenting patterns -- is essential to understanding future travel requirements. Similarly, careful exploration of shifts in manufacturing and retail activities, market penetration of e-commerce, growth in discretionary income, anticipated "niche marketing" of motor vehicles and similar economic changes is essential to understanding future travel requirements.

2. **Technological advances are continuous and have the tendency to increase productivity, not to decrease effort.** Whether it is robotic manufacturing processes or the microwave in the kitchen, technology continually makes it possible to achieve more with less human effort. History has shown that the human effort saved is more often put into other efforts rather than rest. What time we no longer need to spend standing along an assembly line or cooking dinner we use on other activities. The typical American household of 1900 spent much of day and evening and a large part of the weekend engaged in productive activities (earning a living, cooking, cleaning, sewing, studying, etc.). The typical American household of 2000 also spends much of the day and evening and a large part of the weekend engaged in productive ("have to") activities (earning a living through multiple wage earners, cooking, cleaning, shopping, studying, running errands, exploring the Internet, exercising.) Technology has not reduced the level of activity, merely shifted the type of activity.

New activities made possible by technology tend to be more flexible and less regular in terms of time of day and location than those activities they replace. Future technological gains can be expected to generate other new, flexible activities to replace older, more predictable activities. This has an implication for complexity in future travel patterns and a diminished emphasis on peak hour commutation in system design. The same is true for goods movement; improved technology will likely result in greater goods movement, allowing large-scale trade volumes from the farthest reaches of the globe, fostering "distributed manufacturing sites" and facilitating greater consumption of goods worldwide.

3. **On an even more basic level, technological improvements lead to compensatory behavior.** Cruise control does not merely provide convenience, it allows drivers to reduce the attention they pay to operating speed and focus more attention on selecting a CD to insert into the player, for example. Cars with short braking distances and good handling characteristics do not merely add to travel safety, but allow drivers to drive at higher speeds at higher densities while maintaining a certain *perceived* level of safety. Similarly, gains in fuel efficiency over the past 20 years have largely been exchanged for higher vehicle performance. In other words, gains in one area provided by technological advances are partially sacrificed to obtain gains in another area.

Thus, it is wise to temper expectations of future windfall gains from automated vehicles, hybrid electric vehicles or the construction of new roads or transit systems. Much of the direct gain provided by these advanced technologies will be exchanged for other benefits.

4. **Technological advances are American society's preferred method of accommodating transportation energy and air quality challenges.** Technology has allowed for a dramatic reduction in total vehicle emissions in the US over the past twenty years despite steady increases in travel. Similarly, continuous improvements in the fuel efficiencies of vehicles have allowed manufacturers to meet federal fuel efficiency standards while average vehicle size has continued to grow to meet market demands.

Any future, lasting limitations to fuel supply -- or serious political commitments to reducing CO₂ emissions -- can be expected to be pursued in the US primarily through technology. Accepting this truth means recognizing that neither diminishing petroleum reserves nor global climate change are likely to force to major shifts in the travel dynamics of the US at least in the short term. This could change significantly in our country if regional agreements can be reached which require owners of gasoline and diesel vehicles to pay the true cost of their pollution.

5. **Technology is most easily embraced if it requires little change to established personal behavior and can be introduced to some people or firms and spread to others.** Anti-lock braking systems,

cruise control, rack-and-pinion steering, air bags and other features were first introduced in high-end models and then extended to virtually the entire fleet as costs came down. Electronic tolling has gained acceptance by being optional, allowing market penetration to grow slowly. Similarly, global positioning and tracking devices have entered the travel environment primarily through package delivery firms such as UPS and FedEx. From there, the technology will migrate to other businesses, to high-end personal vehicles and eventually to most of the fleet.

Steady advances in collision avoidance systems, vehicle guidance systems and the like very well could lead to incremental creation of virtual automated systems. Further improvements in vehicle safety can also be anticipated.

6. **Transportation conditions in current high demand locations can be expected to remain congested in future peak periods and during traffic "incidents", regardless of what actions are taken in the interim. From a different perspective, the transportation system is likely to offer some excess of supply for a considerable portion of the day.** The paradigm of compensating behavior contributes to this paradigm. That is, there is no ability of the public sector to address congested conditions by building such large amounts additional capacity or improving technology sufficiently that it satisfies (a) existing demand, (b) future growth in demand, (c) latent demand that would manifest itself if congestion were reduced and (d) other compensatory behavior such as increased densities. This truth applies to congested New York City subways and to congested Los Angeles freeways. In the Capital District of New York, work by CDTC and NYSDOT Region 1 in 1995 concluded that no feasible amount of highway widening would produce uncongested traffic conditions on the Northway in 2015. The flip side of the coin is that even in the most congested locations, there are and will continue to be parts of the day or week during which supply is ample and travel conditions relatively easy. This too applies to New York City subways, LA freeways and the Northway.

Because of this "truth", transportation planners need to re-think the necessity of highway expansions and consider such actions more discretionary in nature. Consideration of expansion of highways and transit systems can and should be pursued less as solutions to problems (because the problems may not disappear) and more as creation of new opportunities.

A corollary is that actions pursued as problem solutions may introduce new problems. Driverless cars may prove to increase hourly lane capacities on freeways during normal conditions but could add VMT to the highway system as cars circulate between trips.

7. **Personal and commercial travel behavior accounts for congestion through an equilibrium process that will prevent gridlock.** The transportation planning and engineering profession has not fully acknowledged this durable truth. Traffic flows on congested streets in Manhattan and on the congested expressways of LA in a sluggish fashion today – but in a manner quite comparable to that ten and twenty years ago. Congestion may have spread to a larger portion of the highway system, but congestion has not increased in already-congested facilities at the rate of overall activity or travel growth. In the Capital District, recent traffic counts on an important arterial (New Karner Road in the Pine Bush area of Albany) show comparable (albeit congested) peak-period traffic volumes to those of ten and fifteen years ago. This is despite millions of square feet of new retail and commercial space constructed in the Pine Bush over that period of time and few alternative routes to and from the new activity centers.

Commercial travel fits into this equilibrium process, as well. Long-distance truck drivers frequently schedule breaks to coincide with metropolitan rush hours and resume driving when the worst traffic is past.

Package delivery firms budget extra time and vehicles for deliveries in congested locations, focusing less on the absolute cost of such adjustments as on their relative advantage or disadvantage when compared to their competition. As a result, congestion proves to be less of an issue to commercial traffic than one might otherwise expect.

Exploration of this curious dynamic is imperative. The standard forecasting practice may overstate future traffic congestion (and lead to overstating the economic benefits of highway expansion) by not fully incorporating this equilibrium.

8. **Whether travel speeds increase or decrease over time, there is a limit to the amount of time an individual or household is willing to spend daily in travel.** While the distribution of the curve of willingness is broad (some people have a low tolerance for time in travel, others a high tolerance), the curve appears to be reasonably consistent over time and from location to location. For commutation, Census journey-to-work information reports only a 5% increase in the median trip length in the US work trips between 1980 and 1990 despite double and triple-digit increases in urban peak hour congestion over the same period.

Even as continued increases in discretionary income and technological advances permit Americans to pursue new and additional activities, there is likely to be a natural limitation to the amount of additional time spent in travel. Americans are unlikely to pursue (for any long period) new activities at times and locations that force their total time in travel to exceed an internal comfort level. This contributes toward the equilibrium process that accommodates the differences between congested areas and uncongested areas.

Similarly, with work hour restrictions on long-distance truckers, operational or locational adjustments will be made to accommodate travel speed changes.

9. **Private sector land use actions are a primary means of accommodating changes in travel speeds in the United States.** The locations of jobs, housing, retail and other activities have shifted significantly over the past 30 years. This has not been primarily due to the need for space; the aggregate buildout capacity of available undeveloped land and redevelopment sites in an area such as the Capital District continues to exceed the expected level of development by a factor of five, ten or twenty to one. Rather, locations have shifted to maintain mobility and accessibility (keeping household or commercial travel time budgets within acceptable bounds) while responding to perceived and real market forces. During periods of transportation system expansion, many individuals trade in travel time savings for "more house" and the expectation of better schools in the suburbs. During periods of limited system expansion and rapid growth in congestion, jobs have moved out to suburbs as well. The new mix of origins and destinations of trips has maintained travel time budgets roughly consistent over time despite the changing travel environment. In many ways, this statement is a corollary to statement #3 -- land use change is one of the compensatory results of transportation technological change.

This "truth" has many implications for metropolitan transportation planning. First, it implies that all investment that improves travel time (whether it is highway capacity, a new rail line, traffic signal interconnection or effective incident management) is likely to have a land use spreading effect. It also implies that the lack of transportation system investment to maintain travel times also contributes to land use spreading. Public options that might be expected to constrain land use spreading are largely limited to those which enhance the market attractiveness of already-urban environments while not enhancing the attractiveness of undeveloped outlying areas. Examples would be brownfield redevelopment in a very accessible urban area;

improvement of urban (rather than radial, commuter) transit services; streetscaping investments and zoning changes and incentives to create mixed-use urban neighborhoods.

10. **Unlike their European counterparts, Americans are willing to tolerate a considerable degree of travel inconvenience in exchange for personal freedom and limits to governmental control and taxation.** While there will be grouching and displeasure over poor bus frequency or congestion on an expressway, American society does not tend to expect or demand that government solve a transportation problem simply because one exists – at least not to the degree that European societies do.

It is part of the American philosophy and temperament to hold a limited view of the role of government while insisting upon maximum personal latitude. Americans are therefore much more likely to find answers to transportation predicaments on their own and be comfortable with their choices than to call for public sector intervention. This dynamic plays a great role in the equilibrium process discussed above. It also implies that government actions that curtail personal freedom and choice to achieve transportation system objectives will not be received warmly.

11. **Further, Americans have proven unwilling to indefinitely provide support (public acceptance or public financing) for any purpose unless a compelling argument is made regarding the need, unless success is viewed as likely, and unless the cost of deferring the program is believed to be great.**¹⁹ Transportation program initiatives that have been funded at the federal, state, metropolitan or local levels generally meet these three criteria. Those that do not meet the criteria join many other desirable notions -- universal health care, expanded urban parks, free college tuition and similar concepts -- in a large "needed but no funds available" list.²⁰ Similarly, there are many potential programs to achieve broader societal goals that are not costly monetarily but would restrict personal freedoms or "take away" current benefits. These also fail the public acceptance tests of urgency and likely success in all but extreme (wartime) circumstances. In this category would fall conversion of general-purpose highway lanes to high occupancy vehicle use (a "take away" program) and downtown parking prohibition (personal freedom limitation).

Transportation planners should test potential policies and investment strategies against these criteria.

12. **For this reason, pricing mechanisms to regulate travel demand will not be accepted unless certain specific circumstances emerge.** If the public largely accepts the notion of global climate change and its relationship to CO₂ emissions and believes that the potential for technology to provide CO₂ reductions is tapped out, it may accept the imposition of a gasoline surcharge or carbon tax sufficient to dampen travel levels. However, should technology catch up to the perceived need or should the tax prove ineffective, public support would disappear much as it did for the 55-mph speed limit.

¹⁹ Exceptions clearly exist. Taxing or funding decisions made without much public debate do not necessarily meet these criteria. However, the long-term history of taxing and government programs indicates that programs that do not gain and maintain public support eventually lose meaningful access to public funds. Those that do have public support are continued throughout the ups and downs of taxing cycles.

²⁰ It is common for the public to support many concepts that it is not willing to fund directly. In the transportation arena as in many others, this leads to efforts to secure special appropriations from a higher level of government for projects the community, county, metro area or state is unwilling to fund itself.

Similarly, congestion pricing mechanisms to regulate demand would be likely to achieve public support only if they are viewed as urgent, effective, unavoidable and unobtrusive of government into personal life.²¹

13. **The public will support reasonable and necessary costs to address problems that rise to a level believed to be serious by most people.** As an example, short of economic, political or natural crises, American society will not tolerate indefinitely widespread evidence of crumbling roads, dilapidated bridges or obsolete subway cars. Support may be cyclical, but a compelling argument for the need, expectation of success and concern about the cost of deferral will repeatedly lead to the provision of funds for necessary repair costs. The same cannot be said for all other transportation program initiatives unless and until a sense of urgency or crisis emerges.

On this basis, the transportation profession would be well advised to downplay its estimates of transportation "need", if need is defined as elimination of all physical and functional deficiencies in the nations road, bridge and transit systems. Public support for complete elimination of deficiencies will not be found, making the "need" estimate ring hollow and self-serving. Instead, presentation of "need" based upon public (customer) expectations may be more valuable in advancing the policy debate on transportation programs and funding levels.

14. **Those programs that find public support do not necessarily provide direct benefits to all individuals.** Public transportation continues to enjoy broad attitudinal and tax support across the country 35 years after the first federal transit act. Public libraries are maintained in most communities. This is despite the fact that a majority of Americans do not ride transit (or visit public libraries) even once during a typical year. Broad support can be attributed to the belief that such services do provide an indirect benefit to the larger community.

This aspect of transportation policy is largely absent from discussions of alternative actions. For example, transit investment is typically supported based on arguments of ridership, cost effectiveness and congestion relief. In reality, most transit systems carry a small portion of total travelers, are quite expensive and (due to the equilibrium process) are unable to affect congestion levels. Despite this, many are considered successes within the community and are highlighted as significant community assets. They are considered successes not because of their ridership levels, cost recovery ratios or congestion relief; rather they are considered successes because they provide a legitimate travel alternative and contribute to the substance of urban life -- much as other civic institutions and facilities. Transportation professionals must recognize the notion of transportation facilities and services' legitimacy as part of the mix of features of a civilized culture.

Conclusions

If the statements above can be accepted as durable truths -- as core paradigms unlikely to change in the next thirty years -- then what?

1. **Recognize that investments in transportation facilities and services are a matter of choice, rather than a question of finding the "right answer."** Planners should dispense with the black-and-white notion of designing intersections based on forecasts of peak hour left turn movements for the year

²¹ On the basis of these criteria, it is a tall challenge to move from a HOT lane concept (variable congestion tolling on a new, added lane of an expressway) to charging a congestion price to all highways.

2030, for example. Instead, planners should follow a shades-of-gray philosophy of "what makes sense", scaling investments to the physical context and system function. Travelers will accommodate whatever choice is made.

2. **Admit that transportation investment decisions are value-laden.** Given the public's ability to adapt to any transportation service improvement or degradation, it is obvious that transportation investments change land use, economic and travel outcomes. This admission should lead to careful, public articulation

While the planning process remains entrenched in its ways, there is some movement in national efforts to reform the approach.

"To that end, visioning efforts should also incorporate scenario development as a means of incorporating the concept of uncertainty. Traditional MPO exercises settle on a certain set of future population, employment, household and vehicle ownership forecasts before evaluating alternative transportation system designs. Typically, future land use patterns are a given before the transportation analysis begins. Further, the wide range of items that are inarguably exogenous to the MPO process are nearly universally excluded from consideration in current MPO planning. Colloquy participants recommend that scenario development be part of regional visioning exercises and that the scenarios engage not only in the interaction between transportation system designs and alternative metropolitan growth scenarios but also in the flexibility of the transportation / land use system to respond to a variety of outcomes in the exogenous variables."

A finding from the national "Colloquy on the Coming Transformation of Travel" conducted by the New York State Metropolitan Planning Organization (NYSMPO) and the Federal Highway Administration (FHWA) in 2005. See http://www.nysmpos.org/colloquy_travel.html

of values and desired outcomes. While some policies have been attacked as "social engineering", we must recognize that all transport investments and policies are social engineering -- each action encourages one kind of behavior and discourages another. This admission should also lead to early investment in facilities and services that contribute to desired outcomes and deferral of investments that are largely an accommodation or mitigation of undesirable outcomes.

3. **Elevate customer and taxpayer perceptions as key determinants of the appropriate choices to make.** Far too frequently, engineering rules and limited measures of effectiveness are applied in making public policy choices about transportation. For example, traffic level of service receives an inordinate amount of focus in system plans, despite the fact that surveys tend to indicate that travel time reliability and predictability are valued more heavily by personal and commercial travelers than level of service. Similarly, policy planners should pay greater attention to taxpayer desire and willingness to invest in transit services (if present) and not obsess over a limited number of performance measures in making choices about transit investment.

4. **To the extent possible, explore the likely changes to the more superficial paradigms and factors (such as SUV popularity; the market penetration of telecommuting; the nature of the global economy; the need to travel to a major regional mall to see a movie; patterns of immigration and inter-regional migration; residential, commercial and retail building styles; work hours and telecommuting options; the impacts of climate change; the increase in the number**

of electric vehicles; development of truly autonomous or self-driving vehicles, etc.) that are candidates for subtle -- even radical -- change over the next 30 years. Which paradigms are those which will change? Can we see the handwriting on the wall already?

5. **Hedge bets by articulating viable and plausible alternative futures that are consistent with the durable truths posited above.** Recognition of uncertainty in predicting the future should lead planners and policy makers to a new perspective on investment. It should lead to less evaluation of static performance (which is the best investment to meet 2030 travel demand?) and more on dynamic change (which one provides an immediate benefit and can be adapted to meet a range of future requirements?). It should lead to greater preservation of future options through corridor preservation and modular construction and less scaling of construction to meet long-range forecasts. It should also lead to restraint in making large public investments to fit particular transportation paradigms that are subject to radical change

(such as freight movement, in which modal choice can swing dramatically in response to relatively small changes in technology or fuel cost).

Getting a handle on technological and societal changes in this manner has the potential to significantly change the long-range planning and investment dynamic for the better. Making the change will require a substantial shift in current practices. Such practices include highway design practice (should we really be building roads to accommodate the 85th percentile speed, regardless of context or established speed limits?), public/private infrastructure partnership approaches (can we amend the public process to be timely to private sector needs?), performance evaluation (why don't we consider other factors with the same importance as level-of-service?), alternatives evaluation structures (is there a benefit in an alternative fitting multiple alternative scenarios) and forecasting processes (can we be intelligent and foresighted in integrating demographic and technological changes into our travel demand predictions?).

6. **Promoting an understanding of the "value of planning."** Recognition of uncertainty in predicting the future should lead
7. **Being relevant and implementing plans.** Recognition of uncertainty in predicting the future should lead
8. **When planning for the future, look at it from the perspective of those who will live it.** Recognition of uncertainty in predicting the future should lead

The resulting planning and research agenda is substantial.

Section 2:

Roles and Responsibilities:

Coordinated Efforts

The Capital District Transportation Committee

Background

The CDTC has its origins in the Capital District Transportation Study (CDTS), formed in 1964 to guide the state's technical work leading to the adoption of long-range highway and transit plans. Every municipality in the four counties signed agreements to work cooperatively with New York State in the transportation planning process, fulfilling federal requirements for a "3C" (continuing, comprehensive, cooperative) urban transportation planning process. (These agreements continue to serve as working agreements for the entire CDTC process.) The CDTS adopted long-range regional plans in 1971.

In 1973, the CDTS changed its name to the Capital District Transportation Committee to reflect the continuing nature of its work. In that year also, the CDTC was designated by the Governor as the "Metropolitan Planning Organization" (MPO) for the Capital District urban area. This designation confirmed that CDTC is the group responsible for fulfilling federal metropolitan transportation planning requirements.

In 1985 the Adirondack Glens Falls Transportation Council (AGFTC) was designated MPO for Warren and Washington Counties, and the Town of Moreau and the Village of South Glens Falls (both in Saratoga County).

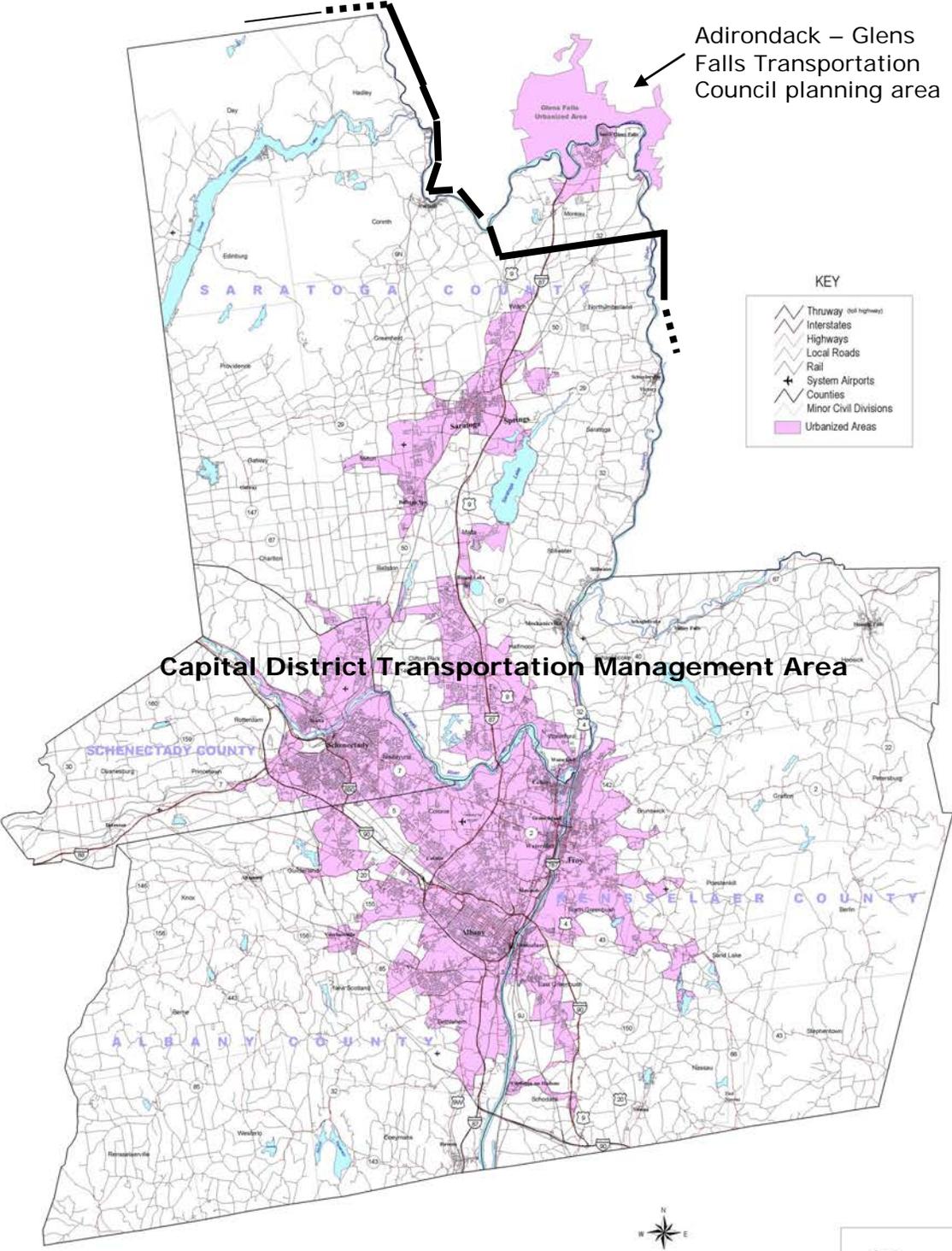
The Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 expanded CDTC's programming responsibility to the boundaries of its four counties (with the exception of the town of Moreau in Saratoga County).

After the Census of 2000, the area surrounding Saratoga Springs was identified as a separate urbanized area exceeding the threshold for MPO planning (50,000 residents). Because the city of Saratoga Springs and Saratoga County were already full participants in CDTC, and because the Capital District Metropolitan Area Boundary included the entirety of the Saratoga Springs urbanized area, CDTC was affirmed as the MPO for the new urbanized area.

Figure 9-1 represents CDTC's planning and programming area, which is defined by the mutually-agreed Metropolitan Area Boundary

**Figure 9-1
Metropolitan Area Boundary**

THE CAPITAL DISTRICT



Adirondack – Glens Falls Transportation Council planning area

Capital District Transportation Management Area

KEY

- Thruway (not highway)
- Interstates
- Highways
- Local Roads
- Rail
- System Airports
- Counties
- Minor Civil Divisions
- Urbanized Areas



STATUTORY RESPONSIBILITIES AS THE MPO.

CDTC's responsibilities as Metropolitan Planning Organization derive mostly from federal laws and regulations. The most important responsibilities are that:

1. It is responsible for the continuing Metropolitan Transportation Planning process, in conjunction with NYSDOT and CDTA. It must make sure that the process is technically sound, includes technical studies necessary to prepare plans and programs, considers social, environmental, and economic impacts, addresses the planning factors articulated in law, provides opportunities for citizen input, and meets all civil rights requirements. This means that, as the MPO, the CDTC has a responsibility for the effectiveness of NYSDOT, CDTA, CDRPC, local, and consultant work as well as the CDTC Staff's planning work. All of these efforts contribute to the effectiveness of the Metropolitan Transportation Planning Process, for which CDTC shares responsibility.
2. It is responsible for coordinating the transportation planning done by all agencies in the Capital District. A "Unified Planning Work Program" (UPWP) must be adopted, showing all work to be done in the coming 1-2 years using federal transportation funds. Activities are listed for CDTA, NYSDOT, CDRPC, local municipalities, and the CDTC Staff. No federally-funded highway, transit, or aviation planning activities can be performed if they are not on the approved UPWP.
3. It is responsible for adopting, on at least a four-year cycle, a four-year Transportation Improvement Program for the metropolitan area, listing the projects in the metropolitan areas to which available federal highway or transit funding has been dedicated. CDTC's practice is to adopt and maintain a five-year TIP, from which the first four years' elements are automatically included in the Statewide Transportation Improvement Program [STIP]. For most funding programs, inclusion on the TIP is a pre-requisite to funding approval and the STIP must include CDTC's TIP without modification. Figure 1 show's CDTC planning and programming areas.
4. Because the Albany urbanized area exceeds 200,000 in population, CDTC's planning area is designated a Transportation Management Area (TMA) under federal law. CDTC is responsible for maintaining a "Congestion Management Process" that maintains technical tools and articulates a comprehensive and integrated approach to considering congestion issues in the metropolitan planning and investment processes.
5. The CDTC is also the designated "lead agency for air quality planning" in the Capital District. It is responsible for documenting conformity of the metropolitan transportation plan (New Visions) and the TIP with the established Statewide Implementation Plan (SIP) for Air Quality. If national air quality standards are not attained, the CDTC is responsible for evaluating and adopting reasonable transportation strategies to attain the standards.

Specifically, Section 5303 (metropolitan) of Title 49 of the United States Code¹ is amended to read as follows:

Scope of Planning Process.--

(1) In general.--The metropolitan planning process for a metropolitan planning area under this section shall provide for consideration of projects and strategies that will--

(A) support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;

(B) increase the safety of the transportation system for motorized and nonmotorized users;

(C) increase the security of the transportation system for motorized and nonmotorized users;

(D) increase the accessibility and mobility of people and for freight;

(E) protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;

(F) enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;

(G) promote efficient system management and operation; and

(H) emphasize the preservation of the existing transportation system.

(I) improve the resiliency and reliability of the transportation system.

The Members of the CDTC

THE FEDERAL HIGHWAY ADMINISTRATION (FHWA), THE FEDERAL TRANSIT ADMINISTRATION (FTA), AND OTHER FEDERAL AGENCIES: FHWA and FTA are agencies of the United States Department of Transportation (USDOT) responsible for oversight of major portions of the planning program, project development work, and project implementation. They also provide for a majority of the funding for these three areas of activity, but do not carry out the work themselves. That is, FHWA and FTA do not plan or build highways, purchase or operate buses. With regard to CDTC, FHWA and FTA maintain joint planning regulations for CDTC's planning process. CDTC and NYSDOT are required to annually certify that CDTC's process and activities meet all of the federal requirements. A formal certification review of CDTC's processes is conducted by FHWA and FTA on a four-year cycle.

FHWA and FTA review CDTC's work program and monitor its progress, and require inclusion of projects on the State Transportation Improvement Program (through inclusion in CDTC's TIP) as a pre-requisite to funding approval for most federal-aid highway and transit projects.

FHWA's planning support comes in the form of 1 1/2% Metropolitan Planning (PL) funds provided by FHWA through NYSDOT to the CDTC for its highway and comprehensive transportation planning purposes. A similar program provides the 1 3/4% Statewide Planning & Research (SPR) funds to NYSDOT for a part of its statewide and regional planning effort. Funding levels are set on a formula basis. SPR funds can, and have been assigned to the CDTC staff budget in the Unified Planning Work Program when appropriate.

Beyond the formal planning fund sources, CDTC can program Surface Transportation Program funds for planning purposes. For a number of years, STP funds have been programmed and used to support CDTC staff efforts in the project development arena. (The CDTC staff provides system modeling services for all TIP project development efforts in the region.)

Congestion Mitigation / Air Quality (CMAQ) funds are also available for planning activities and have supported CDTC's "Corridor Management Initiative" on the TIP. CMAQ funds used for planning are restricted to efforts that lead to implementation; air quality benefits are required with the use of CMAQ.

FTA's planning support comes from annual Section 5303 technical studies and planning grants and application of a portion of the formula-based Section 5307 capital funds. While providing for transit planning efforts that are a local priority, FTA generally indicates areas it would like to see emphasized. Section 5303 funds are provided annually on formula basis to CDTC (through NYSDOT) and (separately) to NYSDOT. Section 5307 formula funds are provided through direct grants between FTA and CDTC.

Both FHWA and FTA serve as advisory members on the CDTC.

Other federal agencies are also involved with CDTC and its members, but do not serve on the CDTC. One is the Federal Aviation Administration, which traditionally has provided both planning assistance to NYSDOT and the Capi-

tal District Regional Planning Commission and capital improvement to public airport owners. FAA-funded planning work is included in CDTC's Unified Planning Work Program.

The Environmental Protection Agency has responsibility for local compliance with the Clean Air Act. In the past, it has provided funds to NYSDOT and CDTC for air quality work, and it continues to be active in reviewing CDTC's UPWP, long-range plan and TIP for consistency with air quality plans.

The Department of Energy supports the national "Clean Cities" program. CDTC serves as the designated coordinator for the Capital District's Clean Communities effort and receives modest financial support from USDOE to support the initiative.

THE New York STATE DEPARTMENT OF TRANSPORTATION (NYSDOT): New York State Department of Transportation wears several hats in connection with the CDTC:

1. It owns and operates more miles of highways in the Capital District than any other unit of government.
2. It is the primary contractual contact between FHWA and local governments. Among other things, this means that NYSDOT is responsible for oversight of highway improvements on the TIP. This involves taking the primary role in project development, design, engineering, and supervision of construction on the state system, and oversight of these activities by local governments off the state system.
3. It is responsible for all of CDTC's primary contractual agreements with the Federal Highway Administration and (with the exception of Section 5307 funds) the Federal Transit Administration. CDTC's planning program and its PL planning contracts must be funneled through NYSDOT. By mutual agreement, NYSDOT also serves as primary contractor with FTA for Section 5303 funds on behalf of CDTC. As a result, NYSDOT has responsibility for reviewing CDTC's Unified Planning Work Program, ensuring that charges to the various contracts are proper and well-documented, and forwarding progress reports to the federal funding agencies. The majority of non-federal match for CDTC's planning program is also provided by NYSDOT through its in-kind services or cash. (At the State's initiative, $\frac{3}{4}$ of the non-federal share of the federal planning funds provided by contract through NYSDOT are provided through in-kind service or cash.)
4. It is responsible for preparation, submission and maintenance of the Statewide Transportation Improvement Program (STIP), which must fully contain CDTC's TIP and also assure compliance with fiscal constraint requirements.
5. It provides the majority of match for many federally-funded transit capital projects as well. Also, by state law all federally-funded transit projects must be approved by NYSDOT, whether or not the state is funding any part of them.
6. NYSDOT administers the state's Transit Operating Assistance program, providing several million dollars annually to CDTA and eligible private operators in the Capital District, and the state's Consolidated Local Highway and Street Improvement Program (CHIPS), providing millions annually to municipalities in the region.

7. NYSDOT also administers FTA's Section 5311 capital program for private non-profit agencies serving the elderly and handicapped, and the Section 18 program for rural transit.
8. NYSDOT is also responsible for maintaining a statewide transportation planning process that satisfies federal law and regulation. The statewide plan must consider the same planning factors that the metropolitan plan must consider. The statewide plan establishes a framework for CDTC's metropolitan transportation plan.
9. Beyond this, federal law holds NYSDOT responsible, in conjunction with CDTC and CDTA, for the Metropolitan Transportation Planning Process. State transportation law further holds NYSDOT accountable for the results of the metropolitan planning process. Thus, the NYSDOT has a great interest in the activities of CDTC and its members, in that the products of the CDTC process are essential to NYSDOT's ability to meet its own mandated responsibilities. The "flip side" is that NYSDOT has a responsibility to CDTC and CDTA regarding the methods and results of its own planning and project development activities, since these are significant in shaping the metropolitan transportation system.

In the UPWP process, NYSDOT will (a) work with MPOs across the state to coordinate statewide planning with MPO activity; (b) consult with the MPOs in allocating federal planning funds; (c) suggest, when appropriate, planning emphasis areas for the MPOs; (d) coordinate UPWP development and grant management with federal partners; (e) participate at the CDTC table in the development of the CDTC two-year work program; and (f) commit Statewide Planning & Research funds and state funds and in-kind service, as appropriate, to advance the CDTC UPWP. Task-specific responsibilities among agency staffs (NYSDOT, CDTC, CDTA or other parties) may vary from task to task or year to year.

10. NYSDOT is a full member of the CDTC Policy Board and Planning Committee and, to the extent practical, every CDTC working group and subcommittee. It serves as a permanent member of CDTC's Administrative & Financial Standing Subcommittee. NYSDOT actively contribute to and is co-responsible for the products of CDTC, namely UPWP, TIP, Metropolitan Transportation Plan and any other CDTC product that attains policy status.²²
11. NYSDOT contributes important information and perspective to the collective decisions of the CDTC, embracing the responsibilities of being both the owner/operator of the majority of the region's arterial and expressway system and the state agency responsible for overall transportation in New York. It works diligently to encourage the wisest actions at the CDTC table.
12. In the development of the metropolitan transportation plan (New Visions), NYSDOT honors the role of CDTC as the forum for the adoption of and modification to the long-range plan. It provides guidance in the development of CDTC resource estimates. CDTC uses any baseline forecasts that NYSDOT provides in its New Visions development work. Because long-range financial forecasts are far more speculative than short-range (TIP) values, CDTC may also consider alternative forecasts and possibilities. The definition of "reasonably anticipated revenues" for the fiscally-constrained plan is defined in a way that is acceptable to NYSDOT. NYSDOT also contributes in each and every subject area considered by CDTC and ensures consistency of the CDTC plan and the statewide plan.

²² NYSDOT is a key party to any action adopted or endorsed by CDTC. Some CDTC products such as planning assessments may contain options or recommendations which are to be used as reference materials without formal adoption or endorsement.

13. In the TIP process, NYSDOT honors the role of CDTC as the forum for adoption of and modification to the multi-year program of projects. As part of this, NYSDOT initiates efforts to estimate federal highway funding levels for CDTC programming purposes by: (1) consulting with NY's MPO staffs on statewide funding assumptions and allocation formulas; (2) allocating these funds to NYSDOT regions; and (3) engaging at the regional level with CDTC and the Adirondack – Glens Falls Transportation Council to agree at the CDTC table on target fund levels by fund source (and by year, as appropriate) for the CDTC TIP. Because of the integrated, non-jurisdictional nature of the CDTC process, NYSDOT submits its candidate TIP projects for consideration against other candidates at the CDTC table
14. NYSDOT maintains the Statewide Transportation Improvement Program and helps identify appropriate funding offsets within the CDTC programming area and in other parts of the state to maintain fiscal constraint. NYSDOT also exercises authority for "project selection from an approved TIP" per CDTC's adopted TIP procedures and administering federal highway contracts on behalf of itself and other project sponsors in the metropolitan area. As part of its contract administration function, NYSDOT works with CDTC to maintain current project status information on both its and local sponsors' TIP projects.
15. NYSDOT supplies information on a regular basis to the CDTC staff to allow CDTC to meet its obligation to publish information on project obligations. Shortly after the close of the federal fiscal year, CDTC staff contacts NYSDOT Region 1 for prior year obligation information. CDTC staff posts this information on its web site.
16. NYSDOT provides a critical function to the development of the TIP and metropolitan transportation plan by serving as the lead agency statewide for fulfilling transportation planning and programming requirements of the Clean Air Act. NYSDOT works with the CDTC staff to ensure that the technical aspects of the Air Quality Conformity Determination submitted by CDTC are sound and that the plan and program are consistent with the State Implementation Plan for Air Quality.

THE New York STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC). As the state agency responsible for air quality monitoring, planning and regulation, NYSDEC has a direct interface with CDTC activities. In cooperation with NYSDOT, NYSDEC is responsible for preparation of a Statewide Implementation Plan (SIP) for air quality, for which CDTC has an important role in the transportation system and service components. NYSDEC involvement in CDTC's overall planning and project development process is critical to successful integration of environmental issues into the transportation program.

NYSDEC serves as an advisory member to CDTC's Planning Committee.

THE NEW YORK STATE THRUWAY AUTHORITY (NYSTA). The Thruway Authority was added to the CDTC in the early 1990's in order to incorporate the Authority's planning and project development efforts into the regional system planning activities of CDTC. The New York State Thruway operates a highway facility of great significance to the Capital District, i.e. portions of Interstate 87, Interstate 90, and the Berkshire Connector. The Thruway Authority uses FHWA funding which must be incorporated into CDTC's plans and TIPs, and is an integral contributor to CDTC's Intelligent Transportation System development efforts.

NYSTA is a member of the Capital District Transportation Committee.

THE CAPITAL DISTRICT TRANSPORTATION AUTHORITY (CDTA). As the sole public transit operator in the Capital District urban area, CDTA has a large stake in, and responsibility for CDTC. The Capital District Transportation Authority (CDTA) was created in 1970 by the New York State Legislature, as a public benefit corporation, to provide regional transportation services by rail, bus, water and air.

CDTA's responsibilities and connections with CDTC are found in the fact that:

1. It plans for and operates the urban transit system serving over 42,000 passengers per day.
2. It operates additional services in rural areas, and in Saratoga Springs. It also operates special "STAR" service for handicapped residents, implementing joint CDTA-CDTC regional plans for handicapped mobility.
3. It is the "designated recipient" for Section 5307 formula grants provided by FTA for transit purposes in the Capital District urban area. This means that CDTA not only receives funds for its operations, but also serves as applicant to FTA on behalf of any recipient of Section 5307 funds in the area.
4. Through State enabling legislation, CDTA also has the option of becoming directly involved in other transportation operations and in recent years has volunteered to take the lead on a number of challenging projects called for in CDTC's New Visions Plan -- the Access Transit Medicaid transportation brokerage; the ITS project on NY 5 and the Rensselaer, Saratoga Springs and Schenectady Amtrak station reconstructions.
5. As a service to CDTC, it serves as "host agency" for the CDTC staff. This means that CDTA acts as the CDTC Staff's legal employer, executing contracts and signing checks on behalf of the CDTC. It also means "front-ending" the cost of the CDTC Staff operations while expenses are being repaid by the state from CDTC's Federal grants.
6. By Federal law, it is responsible jointly with NYSDOT and CDTC for the Metropolitan Transportation Planning Process. This means that CDTA's interest in CDTC's activities extends beyond what the activities produce for CDTA's use in operating the bus system. CDTA's responsibility extends to private transit operator issues, sub-regional and corridor planning, highway and transit project programming and other activities that are part of the overall Metropolitan Transportation Planning Process. "Joint responsibility" also means that the responsibility for CDTA's own planning activities is shared with NYSDOT and CDTC, since CDTA's planning activities are significant in shaping the metropolitan area's transportation system.
7. The CDTA is a full member of the CDTC Policy Board and Planning Committee and, to the extent practical, every CDTC working group and subcommittee. CDTA serves as a permanent member of CDTC's Administrative & Financial Standing Subcommittee. CDTA contributes to and is co-responsible for the products of CDTC, namely its UPWP, TIP, Metropolitan Transportation Plan and any other CDTC product that attains policy status. Task-specific responsibilities among agency staffs (NYSDOT, CDTC, CDTA or other parties) may vary from task to task or year to year.
8. Given CDTC's decision-making process, CDTA participates as a full member and contributes important information and perspective to the collective decisions of the CDTC, embracing the responsibilities of being both the owner/operator of the majority of the region's public transportation system and the designated recipient for federal transit assistance in the region. It works diligently to encourage the wisest actions at the CDTC table.

9. In the UPWP process, CDTA (a) participates at the CDTC table in the development of the CDTC two-year work program; (b) commits FTA formula funds and in-kind service, as appropriate, to advance the CDTC UPWP; and (c) serves as the CDTC staff's "host agency" for first-instance financing, staffing support and contractual requirements of the UPWP. Task-specific responsibilities among agency staffs (CDTA, CDTC, CDTA or other parties) may vary from task to task or year to year.

10. In the development of the metropolitan transportation plan (New Visions), CDTA honors the role of CDTC as the forum for the adoption of and modification to the long-range plan. CDTA contributes to the development of CDTC transit resource estimates. The definition of "reasonably anticipated revenues" for the fiscally-constrained plan is defined in a way that is acceptable to CDTA. CDTA also contributes in each and every subject area considered by CDTC.

11. In the development of the TIP, CDTA honors the role of CDTC as the forum for adoption of and modification to the multi-year program of projects. As part of this, CDTA initiates efforts to estimate federal transit funding levels for CDTC programming purposes by: (1) consulting with NYSDOT and FTA on funding assumptions and allocation formulas; (2) working with CDTC staff to prepare estimates to agree at the CDTC table on target fund levels by fund source (and by year, as appropriate) for the CDTC TIP. Because of the integrated, non-jurisdictional nature of the CDTC process, CDTA will submit its candidate TIP projects for consideration against other candidates at the CDTC table. Project selection for inclusion in the TIP is based upon the principles and budgetary emphasis of the (New Visions) metropolitan transportation plan, using the adopted screening, evaluation, public participation and programming processes. CDTA will also provide a critical role by exercising authority for "project selection from an approved TIP" per CDTC's adopted TIP procedures and executing FTA grants on behalf of itself and other recipients in the metropolitan area.

12. CDTA will also supply information on a regular basis to the CDTC staff to allow CDTC to meet its obligation to publish information on project obligations. Shortly after the close of the federal fiscal year, CDTC staff will contact CDTA for prior year obligation information. CDTC staff will post this information on its web site.

THE CAPITAL DISTRICT REGIONAL PLANNING COMMISSION (CDRPC). As a separate regional planning agency involved in related planning and policy issues, CDRPC has strong ties to CDTC. These include the following:

1. It is the comprehensive planning organization for the four-county Capital District. As such, it is involved in land use, housing, economic development, criminal justice, and environmental planning. CDRPC's and CDTC's regional plans are coordinated with each other's. While historically, CDTC's agreement with CDRPC assigned the Regional Development Plan responsibility to CDRPC, activities have adjusted this over time. CDRPC's adopted Strategic Plan (2004) identifies CDRPC's primary role in developing a regional land use development plan role as serving as a partner to CDTC in CDTC's New Visions and Linkage planning work.

2. By mutual agreement among CDTC, CDRPC, and NYSDOT, CDRPC is the lead planning agency for regional aviation system planning. CDTC serves on CDRPC's advisory group for this work, and resulting Regional Aviation System Plans are presented to CDTC for incorporation into the regional transportation plan.

3. CDTC and CDRPC have established agreements that encourage the use by both groups of a common set of current and future-year data. The responsibilities for compiling the data are shared; CDTC often passes some of its federal planning funds through to CDRPC to develop data or perform some other task for common benefit.

The Capital District Regional Planning Commission is a member of the CDTC.

THE ALBANY COUNTY AIRPORT AUTHORITY. The Airport Authority was added to CDTC membership in 1997 to more fully incorporate the planning and implementation of airport development and airport access issues at the region's commercial airport. The Authority is responsible for overseeing the planning and development of the Albany International Airport. A significant interface exists between Airport activities and CDTC activities. Over the coming years, continued expansion and growth of activity is expected at the Albany International Airport, accompanied by highway projects in CDTC's TIP.

The Airport Authority is a member of CDTC.

THE ALBANY PORT DISTRICT COMMISSION. The Port District Commission oversees the development and operation of the Port of Albany, which includes facilities on both the east and west sides of the Hudson River. The Commission was added to CDTC in 1997 to help assure effective intermodal planning in the Capital District. Common issues between the Port and CDTC include treatment of highway, rail and water access; the use of the Port for regional economic development; the role of the Port in the Champlain-Hudson International Trade Corridor, and planning and TIP issues.

The Commission is a member of CDTC.

COUNTIES, CITIES, TOWNS AND VILLAGES. Local municipalities have several direct responsibilities for transportation that make involvement in CDTC important.

1. Collectively, they own and operate the majority of streets and highways in the Capital District, including many that are important to the regional highway system.
2. They have authority over property taxation, land use planning, zoning, traffic, engineering, building permits, and other activities that affect the type, location, and amount of transportation services needed.
3. The counties provide direct contributions to CDTA's and CDRPC's operations.
4. Individual municipalities contract on an occasional or continual basis with CDTC for technical support. Albany County, the City of Albany, and the Towns of Colonie and Malta contract on an annual basis for CDTC services. Others contract with CDTC in conjunction with consultant activities connected to the Community and Transportation Linkage Planning Program.
5. They have responsibility for administration and design of most federal-aid highway projects off the state system.

Albany County, Rensselaer County, Saratoga County and Schenectady County each have two representatives on the CDTC. The mayors of all eight cities – Albany, Cohoes, Mechanicville, Rensselaer, Saratoga Springs, Schenectady, Troy and Watervliet – are members of the CDTC. The supervisor of the town of Colonie is also member of CDTC. Other towns and villages are represented on the CDTC through the counties, and through at-large representatives.

PRIVATE TRANSIT OPERATORS

Several private operators of transit services provide service in the Capital District. Private operators include Yankee Trails as well as Greyhound and Adirondack Trailways. These operators provide important transportation services to Capital District residents.

Private operators participate in the CDTC process including participation in task forces and project advisory committees. CDTC and NYSDOT Region 1 host regular transit "roundtable" discussions to elicit issues from and share opportunities with private operators for greater public-private service planning and coordination.

CDTC's engagement with private operators is guided by its adopted "Private Operators Policy", which laid a foundation for CDTA's assumption in recent years of the oversight of the Northway commuter services from Saratoga County and Upstate Transit.

CDTC's Organizational Structure

THE COMMITTEE (POLICY BOARD). In the strict sense, the terms "Capital District Transportation Committee" and "CDTC" refer to the Policy Board. The board is also referred to as the "Policy Committee" or "the Committee". All authority of sub-committees, tasks groups, and the CDTC Staff derive from it.

The Committee has its origin in the Policy Committee of the Capital District Transportation Study set up in 1964. Membership has increased through several re-organizational studies over the years. There are 25 voting members currently on the Committee.

Certain members of the Policy Board are on the Policy Board by virtue of their office. These include the mayors of each of the eight cities in the four counties; the Chairman/woman of each of the four counties' legislative bodies; and the County Executive (in Albany and Rensselaer Counties). Other members are appointed by the units of government and agencies they represent. These include: representatives of the Albany County Airport Authority, the Albany Port District Commission, the New York State Department of Transportation, the Capital District Regional Planning Commission, the New York State Thruway Authority and the Capital District Transportation Authority; and a second representative from Saratoga and Schenectady Counties (which have no County Executive)

Two at-large representatives are selected annually by the Policy Board at its March meeting to represent all of the Capital District towns and villages. It is the Policy Board's practice to rotate these appointments from county to county. Generally, an at-large representative will serve one year as an alternate, and a second year as a member on the Policy Board.

A person shall not represent more than one Policy Board member.

Each Policy Board member (except an at-large member) is free to appoint a "designated alternate" of his or her choice. In some cases, more than one designated alternate may be appropriate. Designated alternates have the authority to vote on behalf of the member in his or her absence.

CDTC's review of its membership structure in the 1990's called for by recommendations of various New Visions Task Forces led to the addition of the Airport and Port to the Committee. At that time, the CDTC determined that advisory committee and other methods of participation are preferable to Committee membership to assure adequate representation of the business community, freight interests, community groups and bicycle and pedestrian advocates. CDTC's Policy Board structure therefore retains a composition primarily of directly-elected public officials and representatives of public agencies and authorities that are accountable to the public. CDTC believes that such a structure ensures the highest level of public accountability for CDTC's decisions regarding the use of large amounts of public funds.

In 2003 CDTC adopted a new membership policy providing permanent voting membership to chief elected officials of any municipality over 50,000 in population, as defined by the US Census Bureau. As a result, the supervisor of the town of Colonie was added to the CDTC board.

The current membership composition of the Policy Board is listed in Figure 9-2.

The Policy Board has three officers: Chairman, Vice Chairman, and Secretary, elected annually at the first meeting of the year. The Chairman's responsibilities include chairing meetings, determining consensus, signing certain policy correspondence, and appointing subcommittees. The NYSDOT Region 1 Director has traditionally served as Secretary, and is responsible (with the assistance of the CDTC Staff) for preparing meeting notices, agendas, minutes, and transmitting Committee actions to appropriate agencies.

The Policy Board generally reserves authority to itself for major actions such as approval of plans, adoption of the annual UPWP and TIP, adoption of operating procedures, policy resolution and policy statements. Other responsibilities (such as minor updates to the UPWP, TIP, or operating procedures) are delegated to the Administrative and Financial Standing Subcommittee, the Planning Committee, or to the Executive Director.

Operating procedures have been adopted to specify which responsibilities are delegated. These cover:

- Unified Planning Work Program (development, adoption, and amendment)
- Transportation Improvement Program (development, adoption, and amendment)
- Administrative Procedures for the CDTC Staff
- Committee Practices
- Financial Reporting Procedures (covering CDTC, CDTA, and NYSDOT responsibilities for bookkeeping and billing for CDTC staff expenses)
- Policy Statements (development and adoption)

Copies of the Operating Procedures are found in Section II of this report.

Figure 9-2

COMMITTEE (POLICY BOARD) MEMBERSHIP STRUCTURE

COUNTY

Albany County Executive
Chairperson, Albany County Legislature
Rensselaer County Executive
Chairperson, Rensselaer County Executive
Chairperson, Saratoga County Board of Supervisors
Member-at-Large, named by the Saratoga County Board of Supervisors
Chairperson, Schenectady County Legislature
Member-at-Large, named by the Schenectady County Legislature

CITY

Mayor of Albany
Mayor of Cohoes
Mayor of Mechanicville
Mayor of Rensselaer
Mayor of Saratoga Springs
Mayor of Schenectady
Mayor of Troy
Mayor of Watervliet

REGIONAL AND STATE

Designated Representative of the Albany County Airport Authority
Designated Representative of the Albany Port District Commission
Designated Representative of the Capital District Transportation Authority
Designated Representative of the Capital District Regional Planning Commission
Designated Representative of the New York State Department of Transportation
Regional Director, New York State Department of Transportation*
(if not the designated representative)
Designated Representative of the New York State Thruway Authority

TOWN AND VILLAGE

Supervisor of the Town of Colonie
Two at-large town and village representatives chosen annually by CDTC

FEDERAL

Federal Highway Administration*
Federal Transit Administration*

* - advisory member

The Policy Board (and its subcommittees, the Planning Committee, and the Planning Committee's subcommittees and tasks groups) operates on the basis of consensus. That is, while formal votes are taken on most actions, consensus (rather than majority rule) is sought. Consensus is determined as an agreement among all affected parties. When consensus is not present, action is deferred to give time to address the issues that prevent consensus. The requirement of consensus means that the effective functioning of the CDTC process is dependent upon the cooperative good will of all participants.

A quorum (13 members) is needed to approve any action.

The Policy Board typically meets three or four times annually, unless emergency situations necessitate special meetings. These meetings are usually held on the first Thursday of the months of March, June, September and December. The annual UPWP adoptions are scheduled for March. The TIP is typically released as a draft every second year at the March meeting and a revised draft adopted at the June meeting. At all meetings, a "Privilege of the Floor" agenda item is included for visitors to address items on the agenda. Meetings are typically held at 3:00 pm at CDTC's offices or another accessible location.

Display advertising is purchased in major area newspapers and meeting announcements are sent to all area publications prior to each meeting.

SUBCOMMITTEES: Subcommittees are established by the Policy Board for particular tasks, including nominations, administration, Committee re-organization, or to handle special problems.

The Administrative and Financial (A&F) Standing Subcommittee is the only standing subcommittee. It has particular delegated responsibilities. These are:

- Developing administrative operating procedures for Committee adoption.
- Approving minor changes to adopted operating procedures.
- Approving annual line item budgets, staffing arrangements, staff housing arrangements, salary schedules, and equipment purchases consistent with the UPWP.
- Providing an Executive Director.

Members of the A&F Standing Subcommittee are appointed annually by the CDTC Chairman, who also serves on the Subcommittee.

A Nominating Subcommittee is appointed by the Chairman at the last meeting of each calendar year. The Nominating Subcommittee prepares nominations for at-large town member and alternate, and at-large village member and alternate for the Policy Board to consider. Nominations for at-large Planning Committee town and village representative are also prepared. The Subcommittee also prepares nominations for Committee officers.

Other subcommittees are created by the Policy Board from time to time, and charged with specific responsibilities.

THE PLANNING COMMITTEE: For the most part, the CDTC Planning Committee is composed of the technical counterparts of the members of the Policy Board. That is, a mayor will serve on the Policy Board, but the city engineer or planning director will serve on the Planning Committee.

The Planning Committee membership structure has its origins in the CDTS Planning Committee set up in 1965. There are twenty voting members: one for each of the four counties; one for each of the state/regional agencies (NYSDOT, CDRPC, CDTA, NYSTA, Airport and Port); one for each of the cities of Albany, Schenectady, Troy, Rensselaer, Cohoes, Watervliet, Mechanicville and Saratoga Springs; one for the town of Colonie and one at-large member representing towns and villages.

Planning Committee members that represent only one Policy Board member are appointed by the Policy Board member. County representatives on the Planning Committee (who represent two Policy Board members) are appointed by the county in whatever manner is acceptable to the county. The at-large member is selected annually by the Policy Board at its March meeting.

A person shall not represent more than one Planning Committee member.

Each Planning Committee member (except the at-large member) may appoint a "designated alternate" of his or her choice. In some cases, more than one designated alternate may be appropriate. Designated alternates have the authority to vote on behalf of the member in his or her absence. The designated alternate(s) for the at-large member are selected by the Policy Board annually.

A quorum (11 members) is needed to approve any action.

The current membership structure of the Planning Committee is shown in Figure 9-3.

The Planning Committee has three officers: Chairman, Vice Chairman, and Secretary. The responsibilities of Chairman and Vice Chairman are limited to chairing meetings. The Executive Director has traditionally served as Secretary and is responsible for preparing meeting notices, agendas, minutes, and forwarding Planning Committee actions to the Committee or others.

Figure 9-3

PLANNING COMMITTEE MEMBERSHIP STRUCTURE

COUNTY

- Albany
- Rensselaer
- Saratoga
- Schenectady

CITY

- Albany
- Cohoes
- Mechanicville
- Rensselaer
- Saratoga Springs
- Schenectady
- Troy
- Watervliet

REGIONAL AND STATE

- Albany County Airport Authority
- Albany Port District Commission
- Capital District Transportation Authority
- Capital District Regional Planning Commission
- New York State Department of Environmental Conservation*
- New York State Department of Transportation
- New York State Thruway Authority
- Executive Director, CDTC*

TOWN AND VILLAGE

- Town of Colonie
- One at-large representative chosen annually by CDTC

FEDERAL

- Federal Highway Administration*
- Federal Transit Administration*

* - advisory member

Each Planning Committee member is responsible to keep his/her Policy Board member(s) informed about the activities of the Planning Committee and the issues and proposed actions that are brought to the Policy Board.

Among the major responsibilities delegated to the Planning Committee as a whole are:

- Preparation of the UPWP, TIP and long-range plan for Policy Board approval.
- Approval of minor changes to the UPWP and TIP throughout the year.
- Preparation of resolutions, policy actions and policy statements for Policy Board approval.
- Supervision of UPWP activities of the CDTC Staff and all other agencies throughout the year.
- Appointment of subcommittees and task groups as needed to direct particular study activities.

The Planning Committee meets 8-12 times a year, usually on the first Wednesday of the months of January, February, April, May, July, August, October and November. Additional meetings are scheduled when and if necessary. Meetings are held at 9:30 am, at the CDTC staff office. All meetings are open to the public, and an opportunity for visitors to address the Planning Committee is included at the beginning of each meeting's agenda.

Advisory Committees: Advisory Committees contribute to the planning product of CDTC and provide advice and recommendations to the Planning Committee for its use in developing the UPWP, TIP, long-range plan, in contributing to design details of projects in development, and in reviewing plans and studies.

Each Advisory Committee is composed of CDTC Planning Committee members and representatives (and Policy Board members if interested), private sector industry representatives, local advocates, and other subject matter experts. Each is supported by CDTC staff work on an ongoing basis.

These Advisory Committees consist of extremely motivated people, who provide CDTC with their expertise, inform their organizations and contacts of our planning and programming, and assist us with our public outreach efforts.

The six Advisory Committees are:

- Bicycle/Pedestrian
- Complete Streets
- Equity
- Freight
- Human Services Transportation
- Regional Operations and Safety

Subcommittees and Task Groups: The Policy Board or Planning Committee may appoint subcommittees for particular purposes, such as to consider Planning Committee re-organization. Subcommittees include Planning Committee members interested in the task. A task group is generally a broad group set up at the beginning of a planning study to direct the study. Task groups usually include members of the Planning Committee and other people (residents, local elected officials, business representatives, other public and private agency representatives) appropriate for the task. A task group guides the technical work of the study and approves its products for presentation to the Planning Committee. If consensus is not possible, the Planning Committee's adopted Sub-Regional

Planning Principles stipulate that only those members of the task group who are Planning Committee members have a "vote" on the task group.

THE CDTC STAFF: Since federal planning funds were made available for MPO planning activities in the mid-1970's, the CDTC has chosen to maintain a staff. From 1974 to 1977, the staff was assigned to various member agencies of the CDTC and housed in those agencies' offices. In 1977, the staff was "centralized" in order to be more effective in carrying out CDTC's technical work. Since 1978, the CDTC staff has rented its own offices to establish CDTC's independent identity with the CDTC members and the general public, and to provide an accessible, central meeting location.

The A&F Standing Subcommittee has the responsibility of providing an Executive Director. Prior to 1979, the Executive Director was a NYSDOT employee whose time was donated for this purpose. Since 1979, the Director has been a CDTC staff member. The Executive Director is responsible to the Planning Committee for the CDTC staff's technical work; he or she is responsible to the Policy Board through the A&F Standing Subcommittee for administration of the CDTC staff.

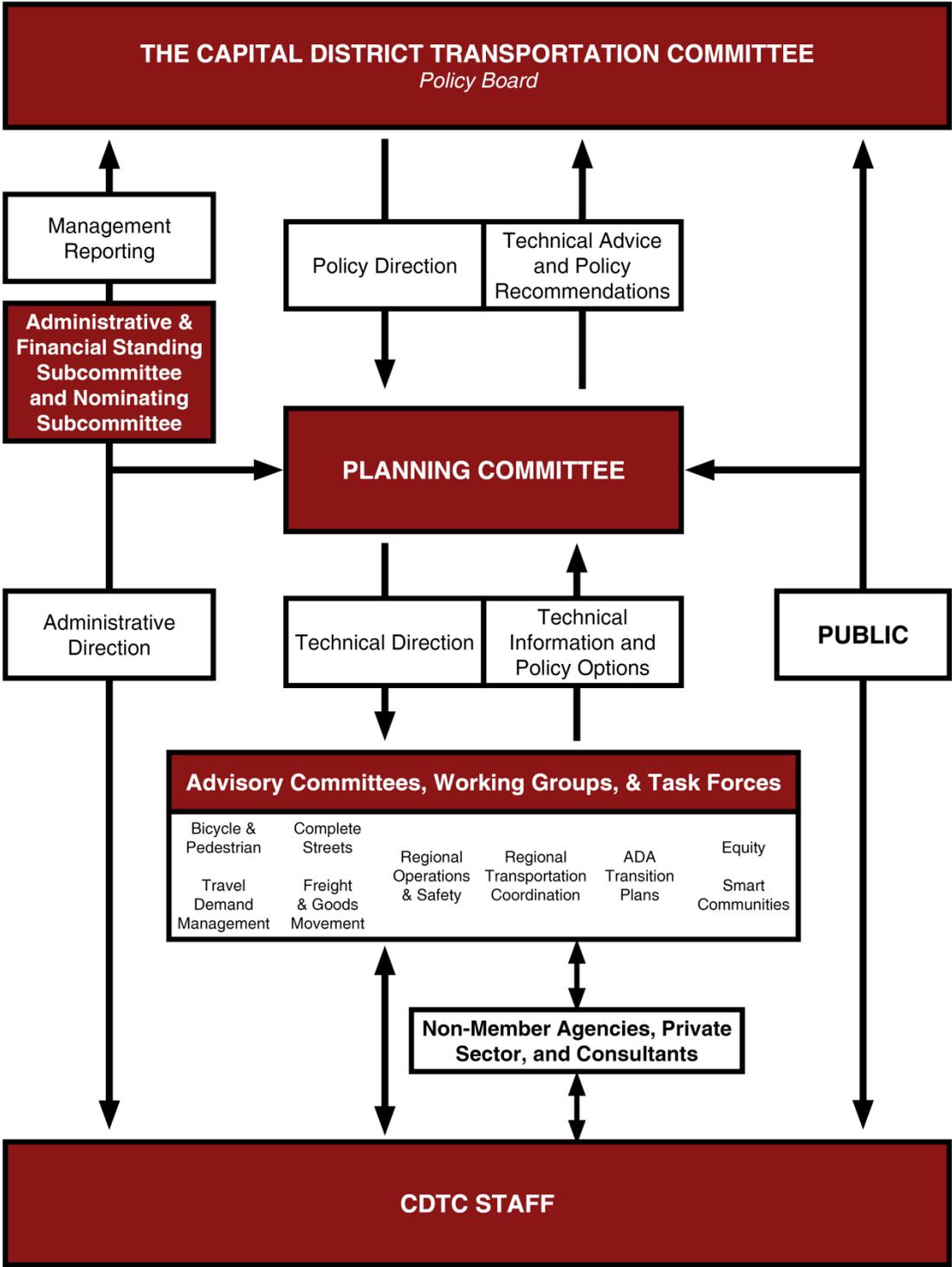
CDTA serves as "host agency" for the CDTC staff, executing contracts and signing checks on behalf of the CDTC staff. For this reason, CDTC staff members are technically CDTA employees although administration decisions are made solely by the CDTC A&F Standing Subcommittee.

The CDTC staff's delegated responsibilities can be summarized as follows:

- It serves as the lead group in the development of the UPWP and TIP.
- It serves as the lead group in the development of metropolitan transportation plan.
- It serves as the lead group in many of the remaining tasks on the UPWP, such as sub-regional studies.
- It prepares meeting materials, minutes and documentation of actions for all Policy Board, Planning Committee and most subcommittee and task group meetings.
- It documents compliance of the Metropolitan Transportation Planning Process with federal requirements.
- It maintains documentation of its own internal financial operations and prepares reimbursement requests, financial reports, and other materials necessary to minimize CDTA's "host agency" work load.

In addition, the Executive Director is responsible for hiring staff, performing annual staff evaluations and determining merit salary adjustments (within guidelines set by the A&F Standing Subcommittee), and for recommending staff promotions.

The following figure represents a simplified summary of the relationship between the Policy Board, Planning Committee, and CDTC staff.



Section 3

The Planning Agenda:

Commitments and Possibilities

Immediate Transportation Issues Facing the Region

CDTC's planning program must reflect current issues and concerns if it is to be meaningful. Once the issues are identified, the choices that must be made about agency responsibilities, budgets and planning tasks become clear.

The issues are well defined as a result of the breadth and depth of the planning effort in the past fifteen years. The New Visions work has grappled with long-term budgetary needs; has generated 15 planning and investment principles and identified dozens of actions to assure a stable, balanced transportation system; and completion of 90 Community and Transportation Linkage Planning studies has raised the stakes regarding transportation and land use integration. As a result of all this work, the CDTC cooperative planning effort over the next five years will continue to emphasize "relevancy and implementation" -- on addressing the technical and institutional obstacles to implementing the broad vision of the plan -- as well as pursuing new challenges that emerge as the long-range horizon is pushed out to 2050 and beyond.

The agenda for the coming five years is at the same time less manageable (being less clear) and more challenging (dealing with institutional barriers, plan implementation, and new transportation technology) than that of past years. CDTC does not anticipate repeating the broad, foundational New Visions effort over the next five years but will reconcile, extend and refocus the plan repeatedly during the period.

Within the context of the New Visions plan, resource availability is a major transportation issue facing the region.

Resource Availability

CDTC's work for the past 30 years has repeatedly identified the over-arching issue affecting transportation planning in the Capital District as the conflict between our high expectations of the transportation system and the limited resources committed to it.

Progress on this broad issue comes in fits and starts. Federal, state and local funding for transportation has increased over 1980's funding levels. Specifically, the ISTEA legislation provided long-desired enhancements to planning funding and provided broad flexibility in the use of highway and transit funds. These funds were further enhanced with passage of TEA-21 and SAFETEA-LU, while MAP-21 did not change funding levels and the FAST Act included slight increases for inflation and program expansion. Second, CDTC's extensive New Visions work concluded that the long-term funding requirements of the plan are achievable -- a balanced, improved system can be afforded if resource levels keep pace with travel growth and if travel growth is dampened from trend projections.

In the years since adoption of the original New Visions plan, NYSDOT, CDTA, local government and others have made substantial implementation progress. However, the challenges remain great in this area. Inflation and state

and local budget constraints have increased the challenges of achieving adequate resource growth. It will also be difficult to keep expectations in line with resources.

As a result, CDTC's focus with regard to resource availability hits four key issues:

1. **Growing the funding base.** The FAST Act expires in September 2020 and the multi-year State funding program expires in 2021. Both need to be replaced with legislation that provides funding at levels higher than the existing levels, that adjusts for the effects of inflation, that continues to support planning needs, that funds much needed and much delayed replacements of both roads and bridges, and provides sufficient flexibility to allow CDTC members to target funding to implement the plan.
2. **Exploring alternative funding options.** The New Visions plan's budget could be met by indexing resources to travel levels and construction indices. In practice, a large portion of transportation funding comes from general revenue (sales, property and income taxes, for example), particularly for local highways. Even fuel tax revenues are only indirectly related to travel demand. Implementation of use-related and inflation-sensitive funding options must be seriously considered.
3. **Ensuring timely and budget-conscious project development and delivery.** The New Visions plan demands a lot from individual projects and their designers. However, NYSDOT staff and consultant resources to identify the scope and design projects are currently constrained. CDTC's planning effort must provide increased assistance to NYSDOT, CDTA and communities in the environmental screening, project development, scoping and conceptual design efforts. The project development process needs to truly embrace the reality of budgetary limitations and engage in multi-objective decision-making. Wise actions that assist in attaining multiple objectives while explicitly balancing cost against benefit should be the only acceptable outcomes of project development efforts. Traditional practices that seek a "solution" to a narrowly defined problem, with limited budgetary constraint, are no longer helpful. Reforming the process will help keep project delivery on schedule while implementing the plan.
4. **Rationalizing the plan to the resource expectations.** The Financial Plan of the New Visions 2050 effort documented the significant increase in unit costs of recent projects relative to the cost assumptions. Until base revenues grow to levels sufficient to meet the needs of system preservation and modest improvements, consideration of "big ticket" initiatives must remain a secondary planning activity.

Emerging Issues Requiring a Planning Response

Long before the ISTEA legislation, CDTC's hallmark was even-handed, cooperative consensus-building based on a strong technical process. CDTC built upon that credibility in recent years by expanding the circle of participants and the range of issues addressed through the CDTC planning agenda. Over the past 35 years, thousands of individuals have become part of the CDTC "program" and have contributed to CDTC's planning process in regional discussions and through Linkage studies.

At the same time, tools developed by CDTC expanded the range of technical issues examined comprehensively by the staff. These tools include a highway condition model, a scenario planning model (VERPAT), a greenhouse gas model (MOVES), a speed data analysis tool developed by the UAlbany AVAIL lab, additional GIS capabilities, a measure of level of bicycle service, a transit module added to our STEP travel demand model, and a formula-driven highway mitigation fee process.

Efforts to maintain and enhance CDTC's credibility include the New York State Association of Metropolitan Planning Organization's (NYSMPO's) "Colloquy on the Coming Transformation of Travel".

The products of the Colloquy constitute the basis of an effective metropolitan transportation program. Each Colloquy statement is shown in Table 3-1, accompanied by the intended CDTC response.

For the most part, these statements and responses are still relevant and still resonate today.

<p>THE DESIRE FOR MOBILITY WILL REMAIN STRONG AND BE FUELED BY EXPECTED INCOME GROWTH.</p>	<p>CDTC WILL CONTINUE TO TRACK AND FORECAST TRAVEL DEMAND AND IMPROVE ITS UNDERSTANDING OF THE RELATIONSHIP BETWEEN INCOME GROWTH AND TRAVEL DEMAND.</p>
<p>The need for flexibility (travel choices that are ubiquitous and sensitive to an individual's or household's schedule requirements) will compound the challenges of designing a transportation system with effective non-auto travel options.</p>	<p>CDTC will support the development of effective non-auto travel options including pedestrian networks, bicycle networks and carpool and vanpool systems. CDTC will also work with communities on Linkage and other planning initiatives to support proximity between residential and trip destination for greater choice.</p>

<p>Immigration is expected to remain substantial due to the aging of the population pyramid of resident Americans and the needs of the economy for younger workers, professionals and entrepreneurs.</p>	<p>CDTC will continue to work with CDRPC to track and forecast demographic details. As immigration continues, CDTC will refine its methods of identifying and responding to the unique travel needs and communication requirements of non-English speaking residents. Linkage efforts and New Visions urban reinvestment TIP policies will help create communities that support "creative class" workers.</p>
<p>Increasing polarization of the labor force composition (between skilled/educated on one hand and low-wage service workers on the other) will exacerbate the regional jobs -housing balance and jobs access transportation concerns for lower wage workers.</p>	<p>CDTC's Linkage program will encourage careful community-level articulation of land use plans to address jobs-housing issues. At the regional level, CDTC and CDRPC will continue to work with others to articulate the social, economic, environmental and mobility threats posed by development trends and commutation issues. CDTC's planning program will continue to nurture innovative modes of travel including vanpools and other reverse commute options.</p>
<p>An increasing proportion of the population will be old or very old and also active, which will result in more older drivers and a growing need for transportation system flexibility to meet the needs of the elderly who must rely increasingly on alternative modes. This will also increase the need for attention to safety. The need to improve transportation options to better accommodate the needs of seniors will be greatest in automobile-dependent areas, and in communities that retain or attract large numbers of retirees.</p>	<p>The New Visions 2050 plan commits to accommodating the needs of senior citizens. The planning process will continue to partner with groups such as AARP and the Governor's Highway Safety Committee to identify and address safety and mobility issues. Aging of the Capital Region also supports coordinated efforts to maintain and improve the region's transit system and ensure coordination of the location of senior-oriented residential, medical and activity centers with transportation services. CDTC's planning process will also pay greater attention to outreach and education efforts focused on the growing senior population. Linkage efforts will also more fully address the issues of aging in place in auto dependent communities.</p>

<p>Growth in freight will continue, especially for inter-</p>	<p>CDTC's planning process includes representatives of</p>
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<p>national and high-speed delivery – all of which is sensitive to quality, reliability and predictability. Economics will drive the push for increased efficiencies in freight logistics across all modes. Truck traffic will increasingly compete with auto travel for scarce highway capacity, and rail and water-borne freight networks will become increasingly attractive alternatives to truck movements.</p>	<p>the Port, Airport and Thruway Authority as voting members; our Freight Advisory Committee will continue to contribute planning and investment recommendations. Further, CDTC will continue to be responsive to NYSDOT's statewide rail and port initiatives.</p> <p>CDTC will also track and forecast truck travel to more fully understand and address the impacts of truck travel on capacity and delay.</p> <p>CDTC's commitment to ITS and more effective regional operations is a response to the time sensitivity of truck shipments.</p>
<p>The degree of penetration of pricing for system management and the level of public support for the use of pricing for other social or environmental goals (such as transit support or freight movement priority) is uncertain.</p>	<p>CDTC's planning process will maintain pricing as a legitimate option. CDTC's principles require full pursuit of management options prior to expansion of the major highway system; The presence of E-ZPass technology on the Thruway allows the region to be a pioneer in this area. However, this is a subject area for which the policy action must take place at the state or national level.</p>
<p>Emerging economies and new world powers will have an increasing influence on the US economic position, will ensure international economic interdependence and will increase international competition for scarce resources such as petroleum.</p>	<p>The vulnerability of the Capital District to energy supply shocks and energy price hikes requires CDTC to place a high priority on planning efforts to develop sustainable communities (which are not totally dependent on long-distance auto travel) and to create effective transit, bike, pedestrian and share-ride networks that have great capacity to absorb unexpected demands quickly.</p>
<p>Treatment of global climate change issues may emerge as a significant factor influencing transportation technologies, perhaps pricing, as well other aspects of the economy and society with their own impacts on travel.</p>	<p>CDTC has pioneered to incorporation of climate change impacts into the planning practice, going back to its full cost analysis of regional transit system options in the 1990's. CDTC will continue to refine its system-level calculations of global impacts both for internal purposes (TIP project prioritization already considers climate change) and external accountability to state or federal monitoring efforts. CDTC will monitor state and national efforts to identify the transportation system impacts of climate change and be prepared to incorporate such considerations into its plans and programs.</p>

<p>National transport policy influence at a scale equivalent to implementation of the Interstate system appears unlikely. Key system design, management and funding decisions are likely to reside primarily in state, local and private entities, with significant variation across the nation.</p>	<p>CDTC will maintain a current and carefully articulated set of planning and investment principles. These provide the Capital Region with both great flexibility to respond to changing roles and responsibilities and also a very solid basis to forge regional policy should national transport policy continue to be equivocal.</p>
<p>The <u>real</u> price of fuel, as well as the volatility of supply, is likely to increase. However, similar expectations in the past have been proven wrong.</p>	<p>CDTC's planning efforts embrace the concept of uncertainty, emphasizing the need to avoid undesirable outcomes and encourage desirable ones. CDTC's planning will continue to acknowledge the risk of fuel price and supply volatility without becoming wedded to a single future fuel price scenario.</p>
<p>Environmental concerns will continue with no diminished significance, and the range of environmental considerations affecting transportation investment decisions may increase.</p>	<p>In response to SAFETEA-LU, CDTC expanded its early environmental assessment and outreach to resource agencies. Further work will seek to integrate state data sources (including extensive GIS data on significant historical and environmental resources maintained by NYSDOT) into the standard data base used by CDTC in its planning and programming work.</p>
<p>Interest and action in strategies addressing objectives labeled "smart growth" or "sustainable development" will grow, as much for as much for quality of life concerns as for a recognition of the interaction between land use policies and mobility decisions. The form and degree of influence of these policies will vary widely.</p>	<p>CDTC's Linkage program is among the nation's foremost planning programs in this arena. CDTC is committed to continuing and expanding this effort and to encouraging state smart growth initiatives to build upon the Linkage / New Visions model, rather than to re-invent the wheel. The Capital Region enjoys a remarkable consensus regarding the need to revitalize older urban areas and carefully plan the growth in suburbs. This permits CDTC, CDRPC and others to jointly work to enhance Linkage practices and further develop the well-established Linkage roundtable.</p> <p>Further, CDTC's practice of including a wide range of municipalities at the planning table (Planning Committee and Policy Board) will be continued, ensuring a comprehensive dialogue on development issues at the MPO table.</p>

<p>There will be a diversity of both user-based and non-user-based funding strategies for transportation facilities and services, with the specific strategies and mix varying by region/state. The magnitude of funding availability relative to “need” is uncertain.</p>	<p>CDTC’s planning work will continue to articulate accurate, comprehensive and current budget requirements for a realistic regional plan. The policy lead for determining funding levels and funding sources will most likely continue to reside at the state and federal governments.</p>
<p>Market forces will continue to drive urban form more than public policy, due to lack of consensus, less public trust in government, and fewer available dollars for public investments. “Smart growth” and “sustainable development” initiatives will have significant impact when and where they reflect consumer market preferences. The combination of local, state and national transportation policy will remain the norm.</p>	<p>This Colloquy statement affirms CDTC’s policy that regional development patterns are a matter of good local planning, market forces, federal/state/local tax policies and regional transportation policy; top-down growth management is not high on CDTC’s planning agenda. Real-world, private investment will occur only as the market permits but will fit into increasingly thoughtful local plans. As noted above, the strong track record with regional consensus and the Linkage program provides a more optimistic expectation for the Capital Region than the Colloquy statement offers for the nation as a whole.</p>
<p>As metropolitan areas grow, the core/CBD of the central city will continue to be an important location of economic activity, but most metropolitan regions will become increasingly polycentric in form.</p>	<p>CDTC’s and CDRPC’s alternative future scenario effort acknowledges this regional expectation. In all future scenarios, the polycentric nature is evident. CDTC’s work will continue to address the dependence on high-level (rail, dedicated lane BRT) on a relatively heavy employment concentration in downtown Albany, and encourage the development of more flexible transportation modes and more complete community development to preclude</p>
<p>Advances in information technology will influence the nature of travel (time of day, frequency, purpose), providing countervailing influences on urban form (both facilitating dispersal of activity and encouraging concentration of like industries.)</p>	<p>CDTC’s planning initiatives will seek to monitor, embrace and leverage private sector technological advances. This argues for alternative future scenario testing regarding development and travel patterns. It also argues for accommodating private sector travel information technologies rather than to trying to duplicate them.</p>

<p>Energy supply and climate change issues will stimulate the development of propulsion systems, vehicle design and fuel types therefore mitigating the impacts on mobility to a greater or lesser degree. Depending upon fuel and vehicle cost, equity issues may emerge.</p>	<p>As noted above, CDTC will resist planning for a specific fuel price and efficiency paradigm. It is very likely that severe fuel shortages or price increases would stimulate technological advances or shifts in vehicle efficiencies. Regarding social equity, CDTC will maintain an even-handed consideration of a wide range of transportation issues, addressing transportation – land use compatibility, the availability of non-auto modes, and environmental impacts with the same vigor as congestion and delay.</p>
<p>There will be an increased management emphasis, improving the efficiency of the use of total system capacity over a 24-hour period with the aid of information communications technology (ICT).</p>	<p>CDTC has established a regional operations initiative and has elevated Intelligent Transportation Systems investment to a budget element in the plan and TIP. Further, CDTC is committed to pursuing an MPO-based multi-jurisdictional, multi-modal regional operations planning effort as funds permit.</p>
<p>Vehicle based driver support systems will result in fewer crashes for everyone and extend the mobility of older drivers; the degree of crash reduction from technology is uncertain.</p>	<p>CDTC will monitor innovations in vehicle technology and assess their implications for system-level safety and efficiency.</p>

Circumstances and Events That would Undermine the Assumptions In the Generally Held Expectations

Climate change

Substantial public and political sentiment could produce a commitment by the nation, or a collection of serious commitments by states and localities to the issue of global climate change. Serious public policy directed at reducing CO2 emissions would be likely to involve a change to current incentives and disincentives for certain fuel and propulsion types, increase the public commitment to alternative modes, and accelerate the movement in areas such as growth management, development practices and other activities. These actions may be at a scale beyond those assumed in the generally held expectations. In an opposite direction, it is not out of the question that public acceptance of CO2's significant contribution to global climate change could be tempered by natural events or scientific discoveries that appear to indicate a weaker relationship between human activity and climate change. Global climate change itself could introduce significant impacts on the US economy and transportation system, ranging from increased infrastructure damage from exaggerated weather events to altered agricultural production and introduce serious challenges permanent to coastal infrastructure.

Fuel supply and costs

An interruption to or permanent reduction in the fuel supply is not implausible. An initial supply shock would lead to a range of short-term responses. If supply or cost is permanently altered from the modest expectations stated earlier, substantial shift in public policy and market responses could lead to a change in vehicle fleet mix, altered development patterns, and could challenge the strength of the US economy for at least a transition period, if not longer.

Economic decline

The interdependence of the world's economies has led to an unprecedented vulnerability of economic health to political conflicts, terrorist acts and unanticipated serious interruptions to worldwide economic activities. While the generally-held expectations point to a continued growth of the US economy in the context of worldwide economic growth, it is not implausible for the US' economic position relative to other world powers to diminish, leading to considerably higher unemployment and social polarization than reflected in generally-held expectations and alter the nation's attitude to a range of issues, including immigration.

New technologies

Technology is known for providing unanticipated surprises, windfalls, and unintended negative consequences. It is reasonable to anticipate a new communication or transportation technology to emerge in the next 30 years that will significantly change the dynamics stated in the statements of generally held expectations. Transportation specifically experienced a number of radical technological changes in the 19th and 20th centuries; it is not unreasonable to suggest that another such change will occur over the next quarter-century to half-century.

Public policy

Major public initiatives have preceded nearly all of the significant transportation system developments in the United States. It is reasonable to anticipate that a public initiative – beyond those currently listed in the generally-held expectations – may emerge at the federal or state level to achieve a significant change in the form and extent of transportation facilities or services.

Planning For an Uncertain Future

We are planners, so we should be able to plan for the future. But what is the future? How do we plan for such totally unforeseen events, like the 2020 coronavirus pandemic? We need data to plan. What data could we possibly use to forecast this uncertain future?

In our long-range plan, New Visions 2050 we acknowledge that the future is changing more and more rapidly, that technology changes by the day, and that we need to plan by examining possible scenarios. This is the strategy that we will use here. We will examine all the possible scenarios/threats which we can reasonably assume would impact our operations, and we will describe possible countermeasures which will help us to continue operations during these scenarios.

We will break these scenarios/threats into 2 categories – acute or short-term and chronic or long-term. We will further break the chronic or long-term scenarios into 3 categories – technical, external, and internal. We will first briefly discuss these threats, and then later on in the chapter describe prevention and mitigations efforts we will use to combat them.

Scenarios and Threats

Acute or Short-Term Scenarios

These events usually occur quickly and last a relatively short period of time. Most of the time the impact of these types of events is severe; so severe that 100% recovery is often not possible. For the first 4 events, the safety of our employees is the primary concern. These events include the following:

- Natural Disasters which cause substantial damage to the building
- Fire
- Pandemic
- Active Shooter
- Computer Attack/Virus

Natural Disasters. We are fortunate to live and work where we do. The northeastern United States is subject to far fewer natural disasters than most areas of our country. We do not normally deal with hurricanes, tornados, earthquakes, wild-fires, rising sea levels, or even droughts. However, we do experience severe ice storms which can knock out electrical power for days and some flooding (but not at our current office location). And of course, we do have significant snowstorms, but they do not normally cause severe damage to a large commercial building, and their recovery is relatively easy and well-rehearsed.

Fire. If a fire occurs while CDTC employees are working in our office, evacuation of the building is our first and primary concern. A secondary concern is the physical damage caused by the fire, which can be severe or minor depending on the severity of the fire. Computer equipment, paper files, historical documents, furniture, etc. could all be damaged beyond use. Water damage from fighting a fire would also cause significant damage, especially to computer equipment.

Pandemic. Who would have forecast a pandemic like the 2020 coronavirus crisis? And who would have forecast that such a severe impact would even limit our access to our office? We know now that such pandemics can occur, that their human impacts (both physical and mental) can be very severe, and that we must plan for them in the future.

Active Shooter. Because the CDTC office is not located in a government building or other building where a large number of people work (such as a shopping mall, school, transportation center, tourist attraction, etc.) the likelihood of a terrorist attack is low. However, like any place of work, CDTC could be a location for an active shooter. The active shooter could be a disgruntled employee or customer, who may not be intentionally targeting CDTC but may be targeting another tenant in our building.

Computer Attack/Virus. These attacks have the potential to cause immense damage to our operations, even though we are sometimes lulled into a false sense of security when they do not occur. The threat of this type of damage is constant, insidious, and occurs without warning. How would we operate if we permanently lost all our files, all our emails, all our data, all our software including our models, and even our computer hardware?

Chronic or Long-Term Scenarios

These damaging scenarios or threats are sometimes difficult to recognize, because they are long, slow processes. This slow depreciation or degrading of MPO capabilities over a long period of time can be just as harmful or damaging as the acute scenarios above. How can we defend against these threats?

Many times, managers must be on the lookout for signs of these changes, and not these changes themselves. Often a trend that has been occurring for years is suddenly recognized. Many times, these scenarios are self-created, and often they are caused by a lack of or a deficiency in management and planning. Other times there are external forces acting in opposition.

Technical Threats.

Maintaining Existing and Developing New Data. Data is critical to maintaining credibility. In past years, CDTC has expanded its traffic analysis zone structure from 471 to 1,000 zones, allowing refinement of the demographic and travel information in our travel demand model. Recently we have secured access to NYSDOT crash data files, purchased supplemental National Household Travel Survey data, collected extensive inventory of pedestrian and bicycle accommodations on the highway system, measured regional trail use, expanded our highway inventory work to cover 100% of Albany County, 100% of Albany City streets, and samples of all local roads, expanded our use of NPMRDS speed data, and greatly expanded our GIS system.

New data is always developing, and existing data must be updated. This is a constant and long-term process which must be managed and secured. Staff must be trained to use large data bases as more and more of them become available, and software must be updated to analyze it.

Improving our data systems will make for better and more credible planning process.

Maintaining Existing and Developing New Models. CDTC has completely revised, tested, calibrated, and improved our very successful Systematic Transportation Evaluation and Planning (STEP) travel demand model. Recently we have added a transit module to it, and connected our GIS system to it. The new model more effectively deals with peak-hour spreading, both AM and PM peak periods, and provides a full interface with CDTC's Geographic Information System (GIS).

We have also added a scenario planning model, VERPAT, and the MOVES air quality model. We also maintain a highway condition model.

Similar to data discussion above, we need to constantly maintain/update these existing models and acquire new models to improve our planning and forecasting.

Technology. CDTC has continued to keep pace with rapidly changing technology. This has included routine replacement of computer equipment, servers, firewall equipment, operating systems, software, and GIS software. It may be easy to save money by postponing these types of purchases, but in the long run, this degrades our capabilities to plan.

The CDTC website has become more and more an essential part of our planning and public participation efforts, but websites do not last forever. Regular updates and improvement are necessary including building more interactive modules and surveys, and connecting with people on social media.

External Threats.

Participation. Participation is a very important part of the MPO process not just because public participation and outreach are required, but also because without it planning can become irrelevant and limited to a select few. We cannot develop a consensus among our members and our residents without participation.

To be relevant we must know what our members and the public are thinking and doing. At the same time our members and the public must know what we are thinking and doing. Call it participation or call it communication, it is critical to a successful MPO process.

Traditionally CDTC has always had very high participation from our members and the transportation industry. Even though our Planning Committee consists of 21 members, its meetings are usually attended by more than 40 people and sometimes more than 50. Those meetings are attended by members, consultants, interested citizens, and other local government representatives.

Our Advisory Committee meetings are also well attended with sometimes 20 - 30 attendees. Our Bike/Ped Advisory Committee meetings include the above Planning Committee meeting attendees along with many bicycle and

pedestrian advocates. Our Freight Advisory Committee meetings include many private industry representatives. And our social media effort has resulted in more and more activity.

However, in these very busy times many meeting attendees and the public just don't have time or can't make the time to participate. Participation is becoming more and more difficult for everyone, but in order to be relevant, to develop a consensus, and to expand the impact of our planning efforts, we must have participation!

Financial Issues. Like most public and private sector organizations CDTC's funding will drive our efforts, and the level or caliber of those efforts. Because of many financial factors which are not controlled by CDTC and most MPOs, financing is often the greatest threat to the MPO planning process. CDTC's continued financing is contingent upon the following conditions:

1. Successful reauthorization of the FAST Act. Without strong federal support in the form of a strong surface transportation law, MPOs would not exist, or at least, would not have the impacts taken for granted by many today. There are always strong advocates elsewhere for removing the federal role from much of what CDTC is engaged in.

2. Continued success of the CDTC-CDTA host agency arrangement and CDTA's willingness to fund the pre-financing levels of future CDTC budgets. The CDTC-CDTA host agency relationship has been held out to other MPOs in the state as a model relationship for nearly thirty years. CDTC's financing counts on its continued success and counts on CDTC's and CDTA's ability to manage the cash flow burden.

3. Continued ability to fund the required 5% share of all expenditures. Because a great majority of CDTC's available revenues are federal, obtaining the required 5% of the non-federal share is difficult. Sources of the non-federal share include overmatches for the CDRPC pass-through agreement and the linkage studies, and in-kind services provided by local governments. Note: CDTC no longer receives annual appropriations from Albany, Saratoga, and Schenectady Counties which at one time totaled up to \$60,000. CDTC also no longer receives non-federal share credit for the local contractual work below.

4. Continued provision by NYSDOT of 3/4 of the non-federal share of CDTC's planning program. As part of its administration of CDTC's FHWA and FTA planning grants, NYSDOT graciously provides 3/4 of the non-federal share through in-kind services and the full match on CDTC's STP project development work. Obtaining sufficient cash match or in-kind match from sources other than NYSDOT to cover the full 20% match on CDTC's federal activities would be very difficult.

5. Continued local contractual work. CDTC has continuing contractual arrangements with the City of Albany, the Towns of Colonie and Malta, and Albany County. Our financing assumes that these will continue at roughly the current funding levels.

6. Ability to access the full authorized level of CDTC planning funds. At one time NYSDOT provided state "first instance" funding to allow CDTC to draw on its planning allocations to the full authorized levels, if necessary. Restrictions at this state level of funding jeopardizes all MPO financial planning.

7. Continued use of capital funds to support CDTC's project development work. CDTC currently uses \$125,000 in Surface Transportation Program (STP) funds to undertake traffic modeling of design alternatives and

other activities primarily in support of NYSDOT Region 1's project development work. This is a major work element of CDTC's staff program.

8. Preservation of modest amounts of carryover funding. In the past CDTC's Administrative and Financial Standing Subcommittee determined that it was desirable to keep a "rollover" balance of up to six months funding available at the beginning of each fiscal year. If this requirement was in place now, CDTC's carryover balance would be well over \$1M. We believe that a carryover balance is still appropriate, but that it should be draw steadily down to reach a minimally acceptable level (\$200,000 – 300,000) because there are always:

- Discussions in the Congress of a "new federalism" which would seriously curtail such efforts as federal transportation support
- Uncertainty about the size and nature of the federal surface transportation law's successor legislation
- Risks of a federal government shut-down which would significantly delay all federal funding

We also believe that it is sound financial policy and a common practice at all levels of government to maintain a small contingency or "rainy day" fund.

MPO Process. The MPO process is a deliberate, well thought-out, tested process of planning for the future of transportation, and the programming of federal transportation funding. When it is followed, the MPO process can be one of the best examples of regional cooperation (not regional government) in the country. The process encourages and sometimes requires compromises and cooperation!

It can be a flexible process, but in most cases, there are no short cuts. Taking short cuts is not desirable. What's the saying, "Anything worth doing, is worth doing right."

Its detractors will say it is too bureaucratic (with a negative connotation), but it is bureaucratic in a positive way. The federal rules for metropolitan planning are specific and sometimes detailed, because they must be. They must be applied in every possible instance in every possible place in every possible state in the entire country. When Congress wrote the laws and the Executive developed the regulations governing metropolitan planning, they intentionally did not want every metropolitan area in the country (now about 420) developing their own processes.

MPO process critics are sometimes looking for nefarious ways to bypass or take advantage of the process. And sometimes politics rears its ugly head, and process becomes perverted, especially when dealing with millions of dollars in transportation funding. It is these examples and others like them when the MPO process is threatened.

Like other chronic threats, the process can deteriorate over a long period of time, and the changes can be relatively small and occur slowly. It could be a slow, general downgrading of the process itself. It could be a member wanting to re-program funding it did not use or does not want to use for a project already programmed on the TIP. It could be a member not wanting to submit a TIP amendment. It could be a member not making information available to the public or not reaching out for public input. There are reasons for the MPO process, and they are all good reasons.

Threats to the MPO process can come from various sources including:

- Federal (laws and policies)

- State (laws and policies)
- Local (hosts and members)

Internal Threats.

Staff. Most MPO staffs are small, say less than 25 employees. The largest MPOs usually have less than 100 employees. For this reason, the impact of staff on the performance and success of the MPO can be great. Each staff members' performance or lack of performance is magnified.

Obviously, everyone wants the best possible staff – a diverse staff with a range of experience and expertise. A high performing staff equals a high-performing MPO, and the opposite is also true. A low-performing MPO can easily become irrelevant.

Every staff should be nimble, able to adjust quickly. They should be able to work as a team. They should also be self-motivated and be sensitive to the needs of the MPO members, etc., etc., etc. Of course, this is easier to say and much harder to do. But what could be more important to a MPO's success than its personnel, and how much time and resources should be spent "cultivating this garden?"

Gaining specific experience with a small staff is often also a problem. For example, planners need to be personnel managers, but unfortunately senior planners in small to medium MPOs may not get the opportunities to manage people and develop their own management "style."

Below we will discuss strategies to keep all these threats at bay.

Strategies and Mitigation Measures

Acute or Short-Term Scenarios

The response to all these scenarios centers around the safety of our employees first, and the MPO's electronic resources – computer hardware and software, electronic files and emails second. Ensuring that our employees are safe during natural disasters, fire, pandemic, and active shooter events is always our primary concern.

Natural Disasters. As we said above, the Capital Region is subject to far fewer natural disasters than most areas of our country. However, employee safety while commuting to and from work is a concern. Consideration should be given to office closing and working at home during a natural disaster.

Fire. If a fire occurs while CDTC employees are working in our office, those employees shall evacuate the building as soon as possible. Keep in mind that a fire could block one of our 2 exits, and use the exit which is safest. Do not attempt to exit from a window unless it is absolutely the only exit available to you.

The building owner conducts evacuation drills regularly. Participate in these drills and take them seriously. Know where our meeting place is once outside the building.

Pandemic. Operating during a pandemic is much more complicated, as we all learned quickly during the 2020 coronavirus crisis. Most, if not all, MPO staffs are considered non-essential and so must work from home. Working from home involves a whole other new set of problems/hurdles.

Working from the “cloud” does make things easier because home computers can easily gain access given the proper security. However, it does require that you maintain all your files on the “cloud” and this will come with its own costs.

Connecting staff at home to their work computer requires specific network equipment so that the system security is not compromised. In this case there are usually conflicts between network operating systems and home computer operating systems, and software problems, which must be resolved. Not everyone in your staff may have sufficient computer resources at home. Work desktops or laptops may need to be relocated to staff homes.

It took CDTC 5 full days to provide staff with work access from home.

In addition to working with work files, etc. at home, it is advisable to have remote meeting capabilities (video and audio). With this capability staff meeting, monthly Planning Committee and Policy Board meetings, and other meetings can still be held with some resemblance of normalcy. There are many choices for this software and these services.

Keep in mind that staff may not be as productive at home. Some staff will absolutely need to care for young children or other family such as parents, and at home there are always some other distractions which will require their time. There is also no substitution for person-to-person interaction, collaboration, and team building; access to our members; and the benefits of discussing issues with other staff, which cannot usually be done during a pandemic.

If the office is closed during a pandemic, developing a reopening plan is necessary. Some of the issues which need to be addressed in such a plan include:

- Employee safety
- Reopening phases and work schedules
- Child and family care availability
- Personal protective and testing equipment
- Visitors
- Office cleaning
- Common spaces

Few of us have the experience and expertise to deal with a pandemic. It is imperative that we all follow the safety rules and recommendations issued by local and State health officials.

Active Shooter. Once again few of us have the experience and expertise to deal with this event. The following is guidance from the U.S. Department of Homeland Security. For more information, see https://www.dhs.gov/xlibrary/assets/active_shooter_booklet.pdf

HOW TO RESPOND WHEN AN ACTIVE SHOOTER IS IN YOUR VICINITY

Quickly determine the most reasonable way to protect your own life. Remember that customers and clients are likely to follow the lead of employees and managers during an active shooter situation.

1. **Evacuate.** If there is an accessible escape path, attempt to evacuate the premises. Be sure to:
 - Have an escape route and plan in mind.
 - Evacuate regardless of whether others agree to follow.
 - Leave your belongings behind.
 - Help others escape, if possible.
 - Prevent individuals from entering an area where the active shooter may be.
 - Keep your hands visible.
 - Follow the instructions of any police officers.
 - Do not attempt to move wounded people.
 - Call 911 when you are safe.

2. **Hide out.** If evacuation is not possible, find a place to hide where the active shooter is less likely to find you. Your hiding place should:
 - Be out of the active shooter's view.
 - Provide protection if shots are fired in your direction (i.e., an office with a closed and locked door).
 - Not trap you or restrict your options for movement.

To prevent an active shooter from entering your hiding place:

 - Lock the door.
 - Blockade the door with heavy furniture.

If the active shooter is nearby:

 - Lock the door.
 - Silence your cell phone and/or pager.
 - Turn off any source of noise (i.e., radios, televisions).
 - Hide behind large items (i.e., cabinets, desks).
 - Remain quiet.

If evacuation and hiding out are not possible:

 - Remain calm.
 - Dial 911, if possible, to alert police to the active shooter's location.
 - If you cannot speak, leave the line open and allow the dispatcher to listen.

3. **Take action against the active shooter.** As a last resort, and only when your life is in imminent danger, attempt to disrupt and/or incapacitate the active shooter by:
 - Acting as aggressively as possible against him/her.
 - Throwing items and improvising weapons.
 - Yelling.
 - Committing to your actions

Drills should be conducted regularly. Participate in these drills and take them seriously. Know where our meeting place is once outside the building.

Computer Attack/Virus. For three of these scenarios (natural disasters, fire, and computer attack) we assume that all our electronic resources at your location are lost. For a pandemic we assume that these resources are not lost but that staff has lost direct access to them. In all cases the available strategies or mitigation measures are relatively few, easy to describe, but much harder to accomplish.

The solution to losing all your electronic resources is having off-site backups and hardware. The off-site location should be secure (such as a locked storage room), safe, easily accessible for you, relatively close to your current location, and, of course, not in the building in which you are located. If the MPO is not co-located with its host, then a host site could be a good off-site storage facility.

Hardware. If the MPO operates its own computer network like CDTC, a server or servers should be kept off-site. The server, which is stored offsite must be capable of running your computer network and its operating system.

In most cases it is not advisable or necessary to store other hardware off-site (such as PCs, laptops, and printers) since this equipment is usually easy to procure locally. Specialized hardware such as large format printers, display boards, uninterruptible power supplies (UPS), etc. will be more difficult to procure but are not a critical to MPO operations.

Software. All computer files (including modeling software, other software, data, documents, and emails) should be backed-up regularly. Again, this is easier said than done. We back up all our files monthly, and our emails weekly. Access to these files and emails is usually interrupted during back-ups, so they should be scheduled during non-office hours. Don't miss or postpone a regularly scheduled back-up. "Murphy's Law" dictates that as soon as you miss a back-up, something will happen, and you will need it.

Back-ups of computer files (usually on portable hard drives) should also be stored off-site, preferably not at the same site as your hardware storage. You don't want to lose both your hardware and software if your off-site storage site is damaged.

If you follow these simple rules, recovering from a natural disaster or a computer virus attack will be possible and much easier.

Chronic or Long-Term Scenarios

Technical

Maintaining Existing and Developing New Data. There are several strategies which will ensure that an MPO will have the best data available to it, including:

- Working with and sharing data sets with the NYSDOT. The NYSDOT contract with the UAlbany AVAIL lab to develop methods to analyze the NPMRDS speed data is a good example of this. NYSDOT made the NYSAMPO Modeling Working Group the Advisory Committee for this contract, giving CDTC and all New York State MPOs excellent access to NPMRDS speed data and the development of the NPMRDS web-tool. This Advisory Committee role has also given MPOs excellent access to many other NYSDOT data sets, in-

cluding HPMS data and NHTS data. NYSDOT also maintains other bridge and pavement condition, traffic, and freight data which can be very valuable to MPO planning.

- Working with fellow MPOs and the NYSAMPO to obtain new data
- Working closely with local academic institutions to gain access to private data. For example, CDTC has worked with the Rensselaer Polytechnic Institute (RPI) to analyze private freight data.
- Agreeing to be part of a study which analyzes or develops new data sets
- Sharing data with members, such as transit data from transit companies and TNC (Transportation Network Company) data received by cities.
- Developing local data sets by using surveys and polling. CDTC developed trail user and trail neighbor data as part of our regional trail plan update. CDTC also develops data in many of our linkage and corridor studies, and is contracted by members to collect local pavement condition data.

Maintaining Existing and Developing New Models. There are several strategies which will ensure that an MPO will have the best models available to it, including:

- Assigning data management responsibilities to one staff person.
- Purchasing regular updates to existing models
- Agreeing to pilot new or developing models
- Taking advantage of FHWA/FTA opportunities to learn and implement new models. This was how CDTC obtained and became proficient in the use of our VERPAT model.
- Working closely with local academic institutions to gain access to some of their models. CDTC has worked with the Rensselaer Polytechnic Institute (RPI) and now has access to their freight forecasting model for our region.

Technology. Some of the strategies which MPOs can use to stay up to date on the latest technology, include:

- Assigning IT management responsibilities to one staff person or contractor.
- Empowering staff so that they can and will keep everyone up to date on the latest technology
- Budgeting funds every year for the purchase of new technology
- Maintaining an up to date and accurate inventory of all technology
- Updating/redesigning the MPO website every 4 -5 years, and ensuring that hosting services and software updates are regular and reliable.
- Investigating the latest technology for producing graphics, obtaining public input, maintaining GIS systems, managing the TIP, etc.

External

Participation. There are many ways to encourage public participation including software which can even track and analyze participation and data. Some of ways used by CDTC include:

- Developing a strong website which gives visitors the opportunity to comment, complete surveys, and participate
- Empowering advisory committees so that more people can participate, advise, and become of the planning process
- Developing an MPO Participation Plan, and study public participation plans

- Developing a strong social media presence and finding the right staff person to maintain that presence. It's not a job everyone can do
- Emphasize the need to develop a "consensus" in everything we do, and follow the major themes below.

Integration of Efforts

Three major themes continue to describe the CDTC approach to building consensus on the use of transportation facilities and services to enhance and develop the Capital District. These can be broadly described under the heading of integration -- removing the barriers between isolated decisions and decision processes. The three major areas in which CDTC will seek integration are:

1. Transportation - Land Use. For many years, CDTC has been a leader in seeking policies, procedures and practices that bring land use planning and decision-making and transportation planning and decision-making under an integrated umbrella approach. In the late 1980's, CDTC initiated its shared cost, "cooperative land use and transportation planning" approach with local governments. This led to corridor and town-wide integrated land use management and transportation plans in such areas as Glenville, Niskayuna, Clifton Park, Bethlehem, Colonie and Rotterdam. Several major TIP projects derived from these efforts. The New Visions effort raised the profile of urban revitalization needs, and CDTC has continued its cooperative local efforts with projects such as the NY 5 study, Schenectady's master plan, the South Troy Waterfront study and similar efforts. CDTC has provided the lion's share of funding of the Capital District Regional Planning Commission's development of a regional GIS and its analysis of growth patterns in the Capital District. CDTC will continue to look for opportunities to integrate land use and transportation planning and decision-making.

2. Planning - Project Development - Design. The New Visions Plan and recent project development activity have re-emphasized the need to make the planning/project development/design process as seamless and continuous as possible. The impact of concepts articulated in the New Visions plan, the value of the projects listed in the TIP, the fiscal balance in the plan and TIP, are only as good as the projects that are actually built. CDTC has taken initiatives to help with this integration; first, by serving as the source of traffic forecasts for all TIP projects in the area. Second, by encouraging NYSDOT to implement its Environmental Initiative and Context-Sensitive Design approaches through the use of working groups to guide project development and design decisions. Third, CDTC has programmed funds for additional training in outreach and public relations for project implementers. Finally, TIP amendment procedures now effectively flag scope and cost issues early in the development process, allowing better integration of these choices into the overall programming effort. Over the coming years, efforts to continue to improve the community-orientation and creative aspects of the design process will be pursued. This will include a new examination of how future level-of-service questions should be handled in the context of infrastructure repair projects.

3. Public - Private. A major challenge in implementing a regional plan or designing effective projects is integrating or at least coordinating public and private initiatives. CDTC continues to employ its 1989 Public-Private Highway Financing Procedure where appropriate; this approach has achieved private commitments of millions of dollars in the Albany airport area and has supported upcoming highway projects in the area. Beyond this type of coordination, however, is the broader coordination needed between private initiatives (new shopping centers, office parks, economic development initiatives) and transportation system planning. The Champlain-Hudson Trade Corridor Coalition is just one of what can be expected to be many public-private efforts to capitalize on the strengths of

the Capital District. It is important that private and local-government-led initiatives be integrated into CDTC's overall planning effort to ensure geographic and social equity in the outcomes of these efforts.

4. Planning – Operations. For over a decade, CDTC has been committed to improved transportation system operations as a critical element of the regional transportation plan. New Visions 2050 includes 15 adopted planning and investment principles; the majority of them relate directly or indirectly to the concept of an intelligent, system-wide, non-jurisdictional, multi-modal operating approach that is well-integrated into community, site and facility design. To help integrate management and operations into the planning process, CDTC and NYSDOT created a joint CDTC/NYSDOT Regional Operations and Safety Advisory Committee. Regular meetings will facilitate coordination of activities and initiatives across jurisdictions. A particular aspect of the effort will be the identification of cost-effective operations and management initiatives for consideration in CMAQ programming efforts, including routine drawdowns of regional set-asides in the TIP. This committee may also explore the formal development of a “regional concept” for overall transportation operations, with potential components focused on signal systems, transit systems, among others. In short, the greatest potential for both implementation success and regional benefit in the Capital District would appear to be with an initiative the following characteristics:

- A multi-jurisdictional nature (incorporating state, local, Thruway facilities)
- A multi-modal nature (treating auto, truck, pedestrian, transit, bicycle...)
- A multi-objective approach (addressing traffic flow, transit use, community compatibility, emergency response, greenhouse gas reductions ...)
- A complementary attitude focused on gap-filling and raising the state of the practice rather than appearing to substitute for or “take over” existing operational efforts
- Use of a representative committee or board for regular oversight and for recommending priority planning tasks and investments
- Development of operational plans for key corridors in a multi-facility, multi-modal manner
- Clear connection to CDTC New Visions principles, Linkage study processes and recommendations
- Commitment of staff and contractor services to support additional operations planning, facilitate agreements and establish additional real-time operating protocols in keeping with adopted regional and statewide ITS plans
- Recognition that existing line agencies (NYSDOT, NYSTA, CDTA, etc.) are either not positioned to add staff and contractual activities to support a non-jurisdictional, multi-modal initiative or cannot easily structure a multi-party regional oversight process within the agency
- Incremental development of the range of activities, degree of influence and (if and when appropriate) authority over real-time actions

These characteristics point to housing the initiative either within CDTC or in a new regional body parallel to CDTC. Because of the reputation and stature of CDTC and the inclusive nature of its policy structure, the latter option does not appear necessary.

Financial Issues.

When dealing with financial issues, there are many financial factors which are beyond a MPO's control. This makes financing a somewhat uncomfortable, complicated, and difficult topic for most MPOs. See the issues discussed above in the Financial Issues paragraphs. That said, there are strategies which, if we can implement, will guarantee financial success.

Unlike most public sector budgeting where for the most part, "revenues in = expenses out" MPO finances are a little more complicated. For MPOs there are 2 criteria influencing our budget:

(1.) Annual revenues should equal annual expenses (unless intentionally spending down our carryover), and (2.) Non-federal cash and non-federal in-kind services must add up to exactly 5% (our required local share) of most of our federally funded expenses. If these non-federal shares are not enough to meet our required 5% local share, it must be made up using the alternatives described below.

Recommendations

4. CDTC's maximum staffing is 14 FTEs (full time equivalents) and our current staffing is 12.5 FTEs. If we maintain a base budget consisting of our current staffing, our current indirect expenses and benefits, and a few of the ongoing consultant-led studies, the result is a balanced budget, i.e. our spending will equal revenue. We should also have enough non-federal cash and in-kind services to meet our 5% requirement.

In other words, the number and amount of local planning studies led by consultants will determine if our FHW PL carryover increases, remains the same, or decreases. This occurs because the number and amount of staff-led planning studies are limited by the number of annual staff work hours.

5. Be careful adding overhead or indirect expenses. Their cost increase will obviously increase the necessary revenue to pay for them, but they will also increase the required 5% local share without contributing any local funding.
6. Account for as much local in-kind services as possible! This will require local governments which are participating in CDTC studies to report hourly rates and hours worked during the period of the study. Local governments may not be experienced with this effort, but it should be made a requirement of accepting any CDTC planning assistance.
7. Maintain a reasonable FHWA PL carryover balance. See the reasons described above in the threat descriptions section.

Other strategies which will help achieve financial security include:

- Seek and obtain grants or contracts which reimburse our effort by 100%. We will spend less planning funds on staff expenses, which also reduces our 5% local share. Depending on their sources, these funds might also be used to meet our 5% local share.
- Always be very aware of the issues discussed above in the Financial threat descriptions section.
- As always monitor monthly expenses from project accounting (UPWP expenses) and from the line item budget.

Keep in mind that for MPOs and CDTC the financial alternatives are few. If we do not have enough revenue or we cannot meet our 5% local share requirement, we need to:

- Severely reduce spending by reducing staff or cutting budget, which would also reduce our required 5% local share.
- Request an increased local share from municipalities awarded CDTC staff work or studies, such as linkage studies.

- Go back to the late 1980s and early 1990s when Counties contributed from \$30,000 - \$15,000 each year to meet the required 5% local share.

MPO Process.

The MPO process and MPOs have existed for almost sixty years, since the early 1960s when Congress realized that State DOTs alone could not plan for the entire region and that local governments were critical to the transportation planning process. Since that time there have been many critiques of the process and many ideas for improvements and revisions. Some of those ideas would minimize or damage the process, some even going back to the days when the process only involved state-owned federal-aid eligible roads and interstates. There is no doubt that MPOs have their supporters and their detractors.

MPO managers should be looking at the “big picture” and need to recognize when changes in the federal transportation laws and policies and state laws and policies, will weaken or strengthen the MPO process. This is one very important reason why a MPO should be a member of the Association of Metropolitan Planning Organizations, AMPO. AMPO has the staff and the capabilities to accurately analyze proposed federal legislation. AMPO technical and policy committees consisting of representatives from hundreds of AMPO members from across the country, actively participate in the AMPO analyses and lend their expertise and varying experiences to the process. They are fantastic resources.

For the same reasons above, every MPO in New York State should be active in the New York State Association of Metropolitan Planning Organizations, NYSAMPO. NYSAMPO Working Groups, consisting of MPO staff, are also great resources which can be easily tapped to research, investigate, or analyze new products, trends, laws, etc. There is no excuse for not knowing if a threat to the MPO process exists or is developing. And there are many ways to stay ahead of those changes and respond according.

Another way to respond to threats to the MPO process is strengthen that process and make that process the best it can possibly be. Like a strong ship weathering a storm, a strong MPO can more easily respond to a threat. Conversely a weak MPO will become irrelevant. In order to strengthen the MPO process, MPOs must be:

- Credible – The MPO process must be based on objective and professional analysis and reliable data sources. It must also be balanced between all modes, all geographic areas, and all program areas.
- Participatory – It must involve as many public and private organizations and as much of the public as possible. These organizations and the public must feel like they are part of the process, and that their input is valuable and always considered.
- Implementable – The MPO process must produce products which are implementable. Organizations and the public will lose interest in planning if the strategies, alternatives, and recommendations in our plans never become reality. “Concrete” results should be the goals of every plan.
- Relevant – The process must serve the interests of members and the public. If it doesn’t, members and the public will lose interest and not participate in the process.

Internal.

Staff.

The analogy of a sports team is a good one. A manager of a sports team might be the best manager around, but if he or she doesn't have good players they will not be successful. The stronger that sports team, the better that team will overcome the usual hurdles placed in front of it, the better it will perform, and the better it will be able to "weather the storm." Like a sports team, "chemistry" or the make-up of the team and how teammates interact with each other also plays an important part in the team's success.

So MPOs (and sports teams) are only as strong as their players/staff, and the best way to improve the MPO is to improve its staff. MPOs can maintain a high-quality staff by:

- Developing teams and redundancy – Whenever possible, projects should be assigned to several staff members. Those members could represent different modes or programs which have an interest in the project, or they could be a combination of senior and junior staff. The team approach is a great way to develop redundancy in the staff, since team members are exposed to new practices and responsibilities which they can someday be relied on to perform themselves.
- Developing a succession plan – This may sound obvious, but it is often not an immediate priority, and delayed until it is too late to be effective. There should be a plan to replace every key program manager, senior staff, and administrative staff. Junior planners should be "groomed" to eventually assume these responsibilities.
- Being flexible – A capable staff should also be flexible, able to adjust to changing needs and threats. We can plan for many things, but sometimes while implementing a plan, unforeseen circumstances occur. Staff must be able to adjust when necessary to better address these unforeseen events.
- Being diverse – Staff should be diverse in every sense – seniority, interests, abilities, views and opinions, gender, race, and ethnic backgrounds. This ensures different ideas and perspectives which are critical to a broad-based, widely accepted approach. Lively debates and challenging opinions require staff to sharpen and improve their positions. This results in a better product.
- Transitioning staff and sometimes using part-time work – When replacing a staff person, it is always advisable to have a transition period so that the new staff person can learn their responsibilities from the experienced staff person. If all parties are agreeable, one of the best ways to accomplish this is to hire the experienced staff person on a part-time basis. That person can train the new staff person, and new staff person will have opportunities to work on their own and realize what they do not know.
- Training – Regular staff training improves staff performance and allows staff to learn new methods which they can utilize in their job. There are many ways to train staff including virtual training, training off-site, conferences, and within MPO working groups and committees.

Conclusions

The MPO process is challenging. There are many threats to MPO operations and performance, and those threats can be obvious or much more subtle. Since it takes all staff to respond to these threats, all staff should be made aware of them and the possible strategies to combat them.

MPOs have a history of success, even though they may be one of the best kept secrets in the region. The previous pages are full of CDTC's many accomplishments, and there is a reason for that. Being relevant and effective also requires that others in the region know of your accomplishments. Don't undervalue the need to promote the MPO and the MPO process. If you don't, no one else will.

There are some who actually think that “flying below the radar”, i.e. staying relatively unknown with less attention, is the best way to go. We strongly disagree with that approach. Yes, less attention may bring less negative criticism and less oversight, but there is a serious disadvantage to this approach. You run the risk of being totally unknown, separated from the outside, ineffective, and with little or no support for the important work of the MPO.

Don't be afraid to be involved in the region and to “blow your own horn” on occasion. Despite all the naysayers and critics, the attention you receive will not all be negative. If done well and for the right reasons, the attention will bring more people into the planning process/realm and more supporters than detractors. And, good planning will become better. Remember it's not bragging if it is not exaggerated and it's accurate.

Beyond the above there is no secret to MPO success and continuing operations, except for preparation, flexibility, and constant vigilance.